TREATISES

OF THE

Nature of Man.

First, Wherein the Nature of MAN agrees with that of other Creatures, and herein of the Majesty, Wisdom, Providence, and Goodness of God; and also of Health and Sickness, and Longer and Shorter Life; and the Generation of Living Creatures.

Secondly, Of the Nature of MAN, wherein it differs, and is worse then that of other Creatures; and that MAN is naturally a more helpless Creature than any other; and cannot subsist out of Humane Society and Commerce.

Thirdly, Of the Nature of MAN, wherein he excels other Creatures; and herein of Divine and Humane Laws; and Religion, Judgment, Civil and Commutative Justice; and the Laws and Constitutions of our English Monarchy.

Fourthly, Of the State of MAN by Regeneration; and herein of Christian Faith and Religion.

ALSO THE

HISTORY

OF THE

Life of Sir Edward Coke.

With REMARKS upon it.

And Reflections upon the

Impartial Collections of *John Nalson* L.L.D.

By *ROGER COKE* Esq;

LONDON:

Printed by *J. Cotterel*, and *F. Collins* for the Author. 1685.

DEDICATION.

At the Loweſt Step of

The Meaneſt of Gods Altars,

In all Proſtrate Humility *Roger Coke*

Offers theſe his Mental Labours.

TO THE KING.

KIngs are Gods, yet, Sir, they dye like Men; and as they Dye so do they Live like other Men in continual Cares & Trouble of Mind, and so much more, by how much God hath committed to them a higher Charge above other Men.

For to You, *Great Sir*, belongs the Care for Preservation and Welfare of all your Subjects, of all Degrees and in all Causes; and from them an entire Allegiance to Your Majesty. There is no reason therefore that an *Italian* Bishop or Priest should partake of your Soveraignity, whenas Your Subjects entirely owe their Allegiance to Your Majesty. As Christians we say, no other Power but Gods taking Humane nature upon him, could redeem mankind from the miserable condition they were plunged in by the fall of their first Parents; & as Members of the Church of *England*, we say, every act of Episcopal & priestly Power, is as much done by the Bishop of *Rome*, as by any other Bishop or Priest. More then this cannot be derived from our Saviour or his Apostles, and to arrogate more

in Your Dominions, beſides the Scandal to Chriſtian Faith and Religion, tends to the Diſhonour of Your Majeſty, and endangering the ſafety of your Subjects, which by higheſt Laws ought to be provided againſt.

But, Sir, thoſe men who aſſert the Popes Supremacy in Depoſing Kings, and giving their Dominions to any who can get them, ſay, *The Spiritual Good is to be preferred to the Temporal; and that ſuch deprivation is in order to Spiritual Good.* A ſtrange paſſage to Spiritual Good, which breaks down all Laws which guard Humane Society and Commerce, and lets men looſe into Mr. *Hobbs* his ſtate of Nature, where a man may kill another, without doing injury to that other. And Chriſtian Faith, Religion and Spiritual Good, may ſooner be propagated among Thieves, Cutpurſes, and Murderers, than in ſuch a State where there can be neither Thief, Cutpurſe, or Murderer; and every man left at large to do what he will; and all of them expoſed to be a prey to others, who can Kill, Conquer, or Enſlave them. Whereas of Five of Your Majeſties immediate Anceſtours, (whereof Four dyed in the Communion of the Church of *Rome*) Four of them were deprived of their Dominions by the Pope, whenas there was no pretence of Chriſtian Faith, Religion, or Spiritual Good in the Caſe, which was.

Decade Venice. The *Venetians* were no ſooner freed from a long War with the Turk, when Pope *Julius* the Second, *Ann.* 1508. required them to deliver

deliver up to him the Towns of *Feruse*, *Rimini*, *Ravenna*, and *Cervia*, as of right belonging to the Apostolick Sea, which the *Venetians* refused: Hereupon he makes War upon them, and joyned in League with *Maximilian* the Emperour, *Lewis* the Twelfth of *France*, and *Ferdinand* King of *Arragon* against them, which was done by them all; whereby the *Venetians* were forced to quit all their firm Land in *Italy*. But the Pope fearing *Lewis* would grow too great in *Italy*, used all means to expel him, and *Ann.* 1510. entred into a strict League with *Ferdinand*; the *Swisse* and *Venetians* against him; nor did he use only the Temporal Sword, but Spiritual, and Excommunicated and deprieved *Lewis* of his Kingdom of *France*, and gave it to any who could get it: and because *John* King of *Navarre* refused to joyn in the League against *Lewis*, the Pope likewise Excommunicated him, and deprieved him of his Kingdom, and gave it to *Ferdinand*, who by vertue of this Donation took possession of it, making the Popes Gift his Title.

De Serres.

Spanish Hist. & de Serres.

John thus Deprieved, was reduced to his Principality of *Bearn*, on this side the *Perinæan* Hills; and his Son *Henry* succeeded him; who had Issue *Jane* of *Albert*, Marryed to *Antony* of *Vendosm*, the first Prince of the House of *Burbon*. This Lady, either out of offence that she was deprieved of the Kingdom of *Navarre*, or Conscience, forsook the Church of *Rome*, and became

a Zealous Promoter of the Reformed Religion: and Converted her Husband to it, and continued in it to her death, though
D'avila. he returned from it. This Lady was the firſt Offering to that general Maſſacre all over *France*, *Ann.* 1572. upon the Reformed, being treacherouſly invited to the Marriage of her Son with *Margaret* the *French*
Charles IX. *Kings* Siſter at *Paris*, where ſhe was Poyſoned by a Perfume in Gloves given her before the Marriage.

From *Antony* and this Lady deſcended *Henry* the Fourth of *France*, Your Majeſties Grand-Father, who though he ſubdued the Popiſh League, which oppoſed his Succeſſion to the Crown of *France*; yet to this day the Deſcendents of *Ferdinand* enjoy the Kingdom of *Navarre* by the Gift of Pope *Julius*. And this Deprivation of King *John*, was when all the Weſtern Church was under the Primacy of the Pope; and before *Luther* oppoſed the Doctrine and Uſurpation of the Pope and Church of *Rome*.

But Sir, there were alſo another ſort of Subjects to the King of *England*, who to be great, ſeemed as Godly as theſe, and to attain their Uſurpation, brake through all Divine and Humane Laws; and to eſtabliſh their Tyranny, have perpetrated ſuch Villanies, as all former Hiſtories are ſilent in. Yet this difference remains between them, that theſe have been adjudged Traitors and Parricides in the higheſt degree, by an Authority which they themſelves own,

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and from which lyes no Appeal; whereas the Acts of Popes for depriving Kings of their Dominions, ſtand ſtill upon Record and unrepealed, to be put in practice again, whenever time and opportunity ſhall offer an occaſion. And Your Majeſty may remember, 200000 (it's ſaid) of Your Majeſties Fathers Subjects were Maſſacred by men of theſe Principles in *Ireland*, And it is obſervable, that *Ann.* 1640 when the Rebellious Engliſh and Scots were contriving their Deſigns againſt the King, Church, and Government of this Nation one way; the Romaniſts were as buſie to deſtroy the Perſon of the King, and the then Archbiſhop of *Canterbury*, and the Eſtabliſhed Religion in *England* another: which Sir *William Boſwell* the Kings Embaſſador at the *Hague* diſcovered to the Archbiſhop. *Annals* Charles 1, *f.* 857.

And as *Sixtus Quintus*, (whom Queen *Eliz.* called *Siz Cinque*) deprieved Your Majeſties Grandfather *Henry* the Fourth, *Ann.* 1585. of his Dominions, and declared him uncapable of ſucceeding to the Crown of *France*, becauſe he pretended he was not of the Catholick Religion; ſo there are a ſort of Your Majeſties Subjects who would deprieve Your Majeſties Preſumptive Heir from ſucceeding to the Crown of *England*, becauſe they ſay he is not of the Proteſtant Religion. *D'avila & Serres.*

But, Sir, the ſafety of your Subjects may be endangered from without your Realms, as well as from within; and Herein as Water

ter and Earth compound this Habitable Globe: ſo the Sovereignty of the Britiſh Seas, as well as *Britain*, unites in the glory of your Monarchy: Nor are your Subjects leſs ſafe then Your Majeſty glorious in this Dominion: for your *Britain* knows no other Bounds than the Ocean; ſo long therefore as Your Majeſty Conſerves this Dominion, your Subjects are more ſafe from Forreign Invaſion, than the Subjects of any Princes upon the Continent, how great ſoever their Dominions are.

But, Sir, though this Dominion be a flower Inherent in Your Majeſties Crown of *England*, yet will not Your Majeſty longer enjoy it, then it can be maintained by a Navy Royal, ſuperiour to your Neighbouring Princes and States: Nor can this Navy be Manned but by Marriners maintained and employed in the Navigation of the Nation; nor can the Navigation of the Nation be maintained, but by the Fiſhing and Foreign Trade of the Nation: So that Trade is the Foundation whereon this Dominion is beſt Eſtabliſhed. It is not, Sir, ſo much the Greatneſs of a Fleet, as multitudes of expert Mariners, which beſt preſerves this Dominion; the French Kings Fleet, it's believed, is as great as Your Majeſties, or that of the *United Netherlands*, but not having a proportionable number of Mariners, is not comparably ſo formidable as either.

Endeavours have been uſed to ſhew from what

what Cauſes the Dutch *Netherlands* abound more in Shipping and Mariners, than any Nation in the World: One reaſon there given, is, They generally breed up their Youth of both Sexes in Geometry, and eſpecially Arithmetick, in the *Dutch* Tongue, whereby not onely Men have an advantage above all other in Navigation and Trade, who are more ignorant in theſe Sciences; but Women manage Trade by themſelves, eſpecially in the abſence of their Huſbands.

But, Sir, Trade is not the only benefit which ariſes by Education of Youth in theſe Sciences; for all Commutative Juſtice is founded in them: And all Divine and Humane Learning partake of them. Youth, by being bred in theſe Sciences, where a Method in Reaſoning is obſerved, does not only acquire by every rational Propoſition, a new and certain knowledge, which may be beneficial to him in his future Converſation; but gets a Habit of right Reaſoning, whereby he will be better enabled to judge of the Reaſon and fallacy in any Propoſition, in any other Faculty or Science. It's ſaid, that *Plato* would not admit any into his School who was ignorant in Geometry: and in the ſeventh Book of Commonwealth, requires Mathematical Learning to be taught before any other, for the variety and manifold benefits of it; not onely for better underſtanding other Arts and Sciences, but for better Adminiſtration of the Commonweale.

To theſe may be truly added the Noble Mental Pleaſure, which ariſes in the underſtanding, by the acquiring a new and certain knowledge in every Demonſtration, which before was concealed. Theſe ſtudies, as *Plato* ſays, do exalt the mind, and whet the edge of the underſtanding to Divine Contemplations. In theſe Sciences, no Faction, Hereſie, or Contentions are to be found, which cauſe ſuch hatred and diſſention among men. On the contrary, they ſoften the rudeneſs of Humane Nature, and reclaim it from the harſhneſs and Luxury which it is prone to. *Plutarch* in the Life of *Dion* recites, that notwithſtanding the cruel and bloody nature of *Dionyſius* the younger, he became in love with *Plato*, even to a ſcandal, by inſtructing him in Philoſophy and Geometry.

Whereas the Nobler and better ſort of Youth in *England*, being bred up in Grammar-Schools to learn the Greek and Latine Tongues, which are ſpoken in no part of the World, loſe that precious time which Nature deſigned for Inſtruction, how to Live and Converſe when they ſhall become Men; and then begin to learn Sciences in other Tongues, which they underſtand not half ſo well as their own; whenas they ſhould begin to practiſe in Converſation from what they had learned in their Youth. So that Confuſion of Tongues, which God deſigned for a Curſe, is impoſed upon Youth for their Educati-

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on. If Youth were bred to ſpeak Welch or Iriſh, ſome uſe might be of it; but none by Latine or Greek.

But, Sir, loſs of time is not the only miſchief which attends this breeding in Grammar-Schools; but it is obſervable, that no where in the World, out of *England*, Parents are ſo jealous of Arbitrary Power in their Prince; yet no where elſe do Parents give up their Children to ſo Lawleſs and Arbitrary a Power, as in Grammar-Schools. From whence it follows, that Youth by the Example of their Maſters, get a habit of ſpeaking and acting in Paſſion; from whence they are rarely, if ever, reclaimed afterward.

From Grammar-Schools they arrive at our Univerſities, where they are inſtructed in *Ariſtotle*, and the vulgar Logick, whereby no Rational Propoſition was ever inferred in any Art or Science; nor can be. Whereby it comes to paſs, that this ſort of Breeding making men fit for no Converſation or buſineſs, the better ſort of Youth when they become Men, are eaſily ſeduced by Flattery, and their own inclinations, to all the Vices which a plentiful Fortune can maintain them in.

But though, Sir, this Education be ſo miſchievous to the Nobler and better ſort of Youth in *England*; yet it is worſe in others of little or no fortunes, and more dangerous to the Peace of the Nation. For ſupernumeraries of theſe men thus bred,

bred, being more than can be maintained by the Revenues of the Church; the reſidue to get Bread, are neceſſitated to become Patriots of Factions, and Proſelytes to the Church of *Rome*; where their ſubſiſtance depends upon continuing and creating Factions, contrary to the Eſtabliſhed Religion in the Church, to the endangering the Peace of State as well as Church.

Beſides, theſe men having little elſe to do, revive the Contentions of the old Philoſophers, which joyned with new ones, and clad in Religious ſhapes, wander into more Sects and Factions in this preſent time, than were among the Peripateticks of old. Yet this Phrenſie is peculiar to this Age, that men framing Conceits, which they call Religion, and which they will ſubmit to no Determination, refuſe to joyn with their fellow-Subjects in the Publick Worſhip and Service of God. Whereas, though the Opinion of the Phariſees, Sadduces and Eſſeans, were as wild as in theſe times, yet they always joyned in the Worſhip and Service of God preſcribed by Law.

Your Majeſty hath more bountifully contributed to advance the Study of Geometry, then all your Royal Anceſtors before: So that if Learned Men be accounted the Ornament of the Age wherein they live, how highly then hath Your Majeſty adorned your own Fame in advancing Learning! The Fame of *Julius Cæſar* is more celebrated for reforming the Computati-

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on of the Year, whoſe Kalendar is yet obſerved in Your Dominions, than for Conquering the Roman Empire, and ſubduing ſo many Kingdoms to it.

The deſign of theſe Treatiſes, is to ſhew that Learning in other Siences,as well as in Geometry, may be inferred by a better Method in Reaſoning, then hath been obſerved in Geometry,from Eſtabliſhed Principles; whereby not onely a Progreſſion of Rational Knowledge may be certainly inferred, but the folly of thoſe Opinions which ſo long have raged in the World, to the diſturbance of Humane Peace and Society,will appear. Theſe Humble Treatiſes therefore preſume to Inſcribe Your Great Name, whereby they hope in ſome meaſure to contribute to the Peace of Your Subjects in this preſent time, and future Generations.

So, Sir, that that Divine Goodneſs which allayed the Madneſs of the People, raging twenty years, together by Your happy Reſtauration; from whence Religion, Juſtice, Peace and Plenty, have above theſe four and twenty years flouriſhed in this Nation; may long continue and encreaſe theſe under the Felicity of Your Reign: and that when by Fate in time this Your Fading Crown which God hath given Your Majeſtie upon Earth, ſhall deſcend to Your next Heir, that then he will pleaſe

to grant You one in Heaven, which ſhall be ſubject to no Alteration or Decay by any Power of Time, or Fate, is the Prayer of,

SIR,

Your Majeſties

Moſt obedient Subject,

ROGER COKE.

THE

The Deſigne.

I Am a natural Subject to the King, and by God's grace, a Member of the Church of *England*, and an unworthy Deſcendent from Sir *Edward Coke*; no otherwiſe worthy of his Name, but for the Piety I owe his Memory, whereby I am obliged, ſo well as I can, to ſupport the moſt excellent Frame of our Engliſh Conſtitution both in Church and State, and to wipe off the cauſleſs Durt thrown upon the Memory of Sir *Edward Coke*, by one who ſometimes calls himſelf *John Nalſon* L. L. D. and others. Which that I may better do, I ſhall endeavour to ſhew where men underſtand, and yet can neither Learn, Reaſon or Inſtruct; and where men underſtand and may by reaſon, learn and inſtruct others. But I pray God help me herein, for I have no man living to be my Guide, and muſt walk in ways wherein never man went before me. If I erre, my Reader I hope will be ſo gentle as to bring me into the Path I deſigned to walk in, and that he will not blame me if I go this way, unleſs he can ſhew a plainer, more certain and nearer way to my Journies end: And that I may make my way ſo plain that others may more eaſily follow me in it, than I could find it out. I ſay,

All Learning, Reaſoning and Inſtruction in Religion, Morality and Prudence, as well as in every Art and Science, is begotten from the fore-knowledge underſtood in him, who Learns and Reaſons, and in the Principles of Learning and Reaſoning: and therefore where Principles are not premiſed or aſſented to, but men begin diſputing, they ever proceed and end wrangling; From whence Diſcord, Faction and Contention follows, to the hurt of Humane Society and Converce, without any poſſible progreſs of Rational Knowledge in any Propoſition to the benefit of any man. *Socrates* therefore wiſely requires of *Euthiphro*, that if men be in diſcention, they muſt ſubmit to ſome certain Rule which may determine them; or elſe their diſcentions will be endleſs. Plato *Euth.*

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The Principles of Learning and Reaſoning are immediate, and therefore cannot be demonſtrated by any antecedent or fore-knowledge, and are more known or underſtood than any rational concluſion or inferrence which can be drawn from them; and are without queſtion or diſpute; and therefore it is equally fooliſh to queſtion and diſpute Principles, as to queſtion and diſpute without Principles. And though by queſtioning and diſputing from Principles, Rational Knowledge may be infinitely encreaſed; yet no Rational Knowledge can create or encreaſe one immediate Principle.

Here obſerve a difference between Immediate Principles, and Premiſſes in the Demonſtration of a Rational Propoſition. For though the Firſt or Major Propoſition in every Demonſtration, whether Affirmative or Negative, muſt be Immediate and an Axiom; yet the Minor or Leſſer Propoſitions or Premiſſes in a Demonſtration, may infinitely happen to be Propoſitions which were before neceſſarily inferred or drawn from Principles.

The particular Principles of Learning and Reaſoning are Threefold.

1. Principles of Authority.
2. Principles in the Nature of Senſible Things, expreſſed by certain names.
3. Principles framed in the Mind or Underſtanding of Man.

Firſt, From the Principles of Authority; Religion, good Manners, Judgement in Controverſies concerning Right and Wrong do ariſe; So do's civil Juſtice, which reſtrains and puniſhes wilful Offenders againſt Religion and good Manners; From theſe Principles man derives his property in his Lands and Goods; and from hence the Oppreſſed is relieved and reſtored to what is due to him, and is ſecured in his Life, Eſtate and good Name; and from hence Humane Society and Converſe is guarded and encouraged.

Secondly, From the Principles in the Nature of Senſible Things, Art is begotten, whereby things are made uſeful to Mankind.

Thirdly, From Principles framed in the Mind or Underſtanding; the Sciences of Geometry and Numbers, and all Muſical proportions do ariſe; whereby Senſible Things are diſtri-

diſtributed in Number, Quantity, Value and Proportion, ſo as to Supply the Neceſſites, and Adorn the Conveniencies of Humane Life. In theſe Sciences is all Commutative Juſtice founded; and by them Man Computes never Erring Time, and divides it into Years, Months, Days, Hours, Minutes and Seconds; whereby he find's when Actions were done in Time paſt; and Orders and Diſpoſes of his Affairs, in the preſent and Time to come. From theſe Sciences, Aſtronomy, Navigation, Latitude and Diſtances of Places are found out; ſo is Fortification and Military Diſcipline; and without them all Divine and Humane Learning in any other Art or Science, is uſeleſs and impoſſible.

Note 1.

Here ſtay a little, and conſider the Wiſdom of Nature, which never Acts in Vain or Confuſedly. For as the Senſes are all Different, and Independent upon one another, ſo the Underſtanding differs, and is not Depending upon any of the Senſes. So that thoſe Things or Actions, which are perceived by Senſe, though known by Names, yet can never be Underſtood: and Intelligible Conceptions, and the Cauſes and Conſequences, and End, for which Things and Actions are done, are Underſtood, but can never be the Object of Senſe. It is abſurd therefore to ſay, I underſtand a Horſe, a Cow, or a Tree; but proper to ſay, I underſtand a Point, a Line, Unit, Law, Juſtice, *&c.* and that if a Man ſhall offend againſt Law to which he is Subject, he will Sin; and that Humane Laws are made to Protect Religion, Humane Society and Commerce.

Note 2.

That all Learning and Reaſoning in Religion, Morality, Geometry, and Numbers, is from the fore-Knowledge Underſtood, or Required, to be in him who Learns and Reaſons, without Experience; and though Experience be neceſſary in Art, yet it is ſubſequent to fore-Knowledge Underſtood to be in the Thing, of which you are to be Inſtructed.

For Example: All Art is of Things with Life, or of Things without Life. Things with Life, are Twofold; Senſitive, as a Horſe, *&c.* or Inſenſitive, as a Tree. In all Senſitive Things is underſtood the Attributes of Love, Hatred and Fear; and that they ſeek for thoſe things which they Love, and avoyd and flee from thoſe Things and Actions, which

may hurt or diſtroy them; before by Experince I find by what things Senſitive Creatures may be Allured; and by what Sounds and Actions they may be Awed, ſo as to be made Uſeful.

In Inſenſitive things, as Trees, and Plants, is underſtood that they are inwardly nouriſhed and encreaſed by Moiſture drawn out of the Earth through the Roots, and after ſent up and diffuſed into all the Parts of the Tree; and that every Soil do's not alike produce all Plants; before I ſeek by Experience what Soils are more proper for ſuch Trees and Plants; and what ſorts of Muck is more proper for ſuch Soils and Plants.

And as in things with Life, ſo in things without Life; I muſt underſtand they may be Altered, Converted, Divided and Compounded; before by Experience I ſeek to find out how to Alter, Convert, Divide or Compound them. *Ariſtotle* therefore who ſays, *Experience is a Principle of all Arts and Sciences*, Confounds Art with Science, Religion and Morality: Cannot a Man underſtand a Point and Unit to have no part; all Units and Right Angles to be equal; or that Theft, Blaſphemy or Murder are Crimes, unleſs he find them to be ſo by Experience, and be Hang'd for his pains.

Meta.l.2. c. 1.

The particular Principles of Geometry and Numbers, are not onely immaterial and ſo cannot be perceived by Senſe; as a Point, a Unit, *&c.* but are not really Beings; but onely Conceptions framed in the mind of Man; and therefore muſt be ſo defined, as that this name may ſignifie this Conception, as a Point, *&c.* and no other Thing or Conception. One or more of theſe Conceptions, are aſſumed or given in every Petition and Rational Propoſition.

Note,

The particular Principles in Geometry are Five, *viz.* a Point, a Line, Space, an Angle, a Circle; but *Euclid* miſtaking theſe Principles, not onely Confounds them with Petitions, but makes Thirty Eight of them; and *Clavius* and all Commentators upon *Euclid*, make his Miſtaken Fifteenth Definition to be ſometime a Petition, and to be a Principle in the Demonſtration of the firſt Propoſition; and elſe where an Axiom: whereas a Definition can never ariſe higher than to be the ſubject of a Petition or Rational Propoſition. And the Definite Conceptions of Arithmetick are but Two, *viz.* a Unit, a Number.

Petitions

Petitions in Geometry and Arithmetick are of Conceptions before defined, and are called Petitions, becauſe you require, and are Two-fold.

1. Active, or Problems.
2. Speculative, or Theorems.

Active Petitions are underſtood or required to be in the power of him who Learns and Reaſons, and are governed by a Verb of Power: As a Right Line may be drawn from one point to another. A Right Line may be continued. A Circle at any diſtance may be deſcribed. A Unit may be added to a Unit or Number. A Unit may be ſubſtracted or taken from a Unit or Number, *&c.*

Speculative Petitions are two-fold, Natural, and Accidental.

Natural Petitions are two-fold, Affirmative, and Negative, and are governed by a Verb of the Preſent time. As all Units are equal, all Right Angles are equal: For if Units be not required or preſumed to be equal, a number which contains fewer greater Units, may be greater than a number which contains more leſſer Units; whereby all Learning and Reaſoning in Arithmetick would be confounded and impoſſible. So if all Right Angles were not equal, one Right Angle might be leſs than a ſharp Angle, and another greater than a blunt, whereby no Rule cou'd be obſerved in meaſuring Angles, or indeed in Geometry. A Point hath no part; for if a Point had Parts, the Lines drawn from the Centre to the Circumference of the ſame Circle, might not be equal. A Line hath no breadth: for if you ſuppoſe a Line to contain breadth, the Lines drawn from the Centre to the Circumference of the Circle where it is broader, will be ſhorter than thoſe drawn to the Circumference where it is narrower.

Accidental Petitions are of Chances which may happen in conceptions before defined, and are beſt governed by two or more Verbs of the Future or time to come: As if one Right Line ſhall fall down-right or perpendicular upon another, the Angles on both ſides of the Perpendicular Line, where it falls upon the other Line, will be Right Angles. If right Lines ſhall be conteined in Equi-diſtant points, theſe

Lines

may hurt or diſtroy them; before by Experince I find by what things Senſitive Creatures may be Allured; and by what Sounds and Actions they may be Awed, ſo as to be made Uſeful.

In Inſenſitive things, as Trees, and Plants, is underſtood that they are inwardly nouriſhed and encreaſed by Moiſture drawn out of the Earth through the Roots, and after ſent up and diffuſed into all the Parts of the Tree; and that every Soil do's not alike produce all Plants; before I ſeek by Experience what Soils are more proper for ſuch Trees and Plants; and what ſorts of Muck is more proper for ſuch Soils and Plants.

And as in things with Life, ſo in things without Life; I muſt underſtand they may be Altered, Converted, Divided and Compounded; before by Experience I ſeek to find out how to Alter, Convert, Divide or Compound them. *Ariſtotle* therefore who ſays, *Experience is a Principle of all Arts and Sciences*, Confounds Art with Science, Religion and Morality: Cannot a Man underſtand a Point and Unit to have no part; all Units and Right Angles to be equal; or that Theft, Blaſphemy or Murder are Crimes, unleſs he find them to be ſo by Experience, and be Hang'd for his pains.

Meta.l.2. c. 1.

The particular Principles of Geometry and Numbers, are not onely immaterial and ſo cannot be perceived by Senſe; as a Point, a Unit, *&c.* but are not really Beings; but onely Conceptions framed in the mind of Man; and therefore muſt be ſo defined, as that this name may ſignifie this Conception, as a Point, *&c.* and no other Thing or Conception. One or more of theſe Conceptions, are aſſumed or given in every Petition and Rational Propoſition.

Note,

The particular Principles in Geometry are Five, *viz.* a Point, a Line, Space, an Angle, a Circle; but *Euclid* miſtaking theſe Principles, not onely Confounds them with Petitions, but makes Thirty Eight of them; and *Clavius* and all Commentators upon *Euclid*, make his Miſtaken Fifteenth Definition to be ſometime a Petition, and to be a Principle in the Demonſtration of the firſt Propoſition; and elſe where an Axiom: whereas a Definition can never ariſe higher than to be the ſubject of a Petition or Rational Propoſition. And the Definite Conceptions of Arithmetick are but Two, *viz.* a Unit, a Number.

Petitions

Petitions in Geometry and Arithmetick are of Conceptions before defined, and are called Petitions, becauſe you require, and are Two-fold.

1. Active, or Problems.
2. Speculative, or Theorems.

Active Petitions are underſtood or required to be in the power of him who Learns and Reaſons, and are governed by a Verb of Power: As a Right Line may be drawn from one point to another. A Right Line may be continued. A Circle at any diſtance may be deſcribed. A Unit may be added to a Unit or Number. A Unit may be ſubſtracted or taken from a Unit or Number, *&c.*

Speculative Petitions are two-fold, Natural, and Accidental.

Natural Petitions are two-fold, Affirmative, and Negative, and are governed by a Verb of the Preſent time. As all Units are equal, all Right Angles are equal: For if Units be not required or preſumed to be equal, a number which contains fewer greater Units, may be greater than a number which contains more leſſer Units; whereby all Learning and Reaſoning in Arithmetick would be confounded and impoſſible. So if all Right Angles were not equal, one Right Angle might be leſs than a ſharp Angle, and another greater than a blunt, whereby no Rule cou'd be obſerved in meaſuring Angles, or indeed in Geometry. A Point hath no part; for if a Point had Parts, the Lines drawn from the Centre to the Circumference of the ſame Circle, might not be equal. A Line hath no breadth: for if you ſuppoſe a Line to contain breadth, the Lines drawn from the Centre to the Circumference of the Circle where it is broader, will be ſhorter than thoſe drawn to the Circumference where it is narrower.

Accidental Petitions are of Chances which may happen in conceptions before defined, and are beſt governed by two or more Verbs of the Future or time to come: As if one Right Line ſhall fall down-right or perpendicular upon another, the Angles on both ſides of the Perpendicular Line, where it falls upon the other Line, will be Right Angles. If right Lines ſhall be conteined in Equi-diſtant points, theſe

Lines

Lines will be equal. If one Number ſhall contain more Units than another, that Number will be greater than this other, *&c.*

Note,

Petitions are ill-termed, *Things required* by *Euclid*: For I do not require a Point, an Unit, a Line or Right Angle; but that a Point and Unit have no parts, a Line hath no breadth, all right-lined Right Angles are equal, *&c.* And it is obſervable, as *Euclid* makes 38 Definitions before his firſt Book of Geometry, whereas rightly taken there are but five; ſo he does not premiſe one Natural or Accidental Petition, but onely three Active Petitions, which are not things; whereby no Method or Order of Reaſoning can be obſerved in Geometry, unleſs the Principles be reformed.

Petitions in Religion and Morality, are of Beings which may be expreſſed by certain Names; as God, King, Father, Husband, and Maſter; and in all theſe you require a Law-giving Right, and a Law given to thoſe ſubject to it: And that all Beings which are ſubject to thoſe Laws, are obliged in Conſcience to obey them. And in theſe Petitions you conſider the end for which theſe Laws were given to thoſe ſubject to them.

Petitions underſtood to be in the Nature of Man, wherein it agrees with that of other Creatures, are of the nature of the Soul, and natural Faculties of it in its operations in and by Bodies: and alſo thoſe Attributes which are common to the humane Soul and that of other Creatures; and alſo of the end for which Nature deſignes theſe Faculties and Attributes.

Note,

Here ſtay a little, and conſider how abſurdly *Ariſtotle*, *Plato*, and all the old Philoſophers, confound Definitions with Petitions. For a Definition is the explaning the Name of ſome intelligible thing or Conception: So as this Name may ſignifie this thing or Conception, and no other thing or Conception. A Petition is a Propoſition, wherein you propound Affirmatively or Negatively, ſome natural Power, Paſſion, Attribute, or Property in a thing or Being expreſſed by a certain Name. *Ariſtotle* therefore defining a Man to be a living Creature, miſtakes a Definition for a Petition: For a Definition excludes every thing elſe; whereas there are infinite other living Creatures beſides Man. So does *Plato* in defining

defining Man to be a Two-legged Creature without Feathers; which is ſo by Petition, not by Definition.

Ariſtotle Ana. Poſt. Makes the Principles of Science to be two, proper and common, proper as a Line, common as if equals be taken from equals, what is left will be equal; ſo that the immediate Knowledge which is required in the thing or proper Principle, is not ſo much as mentioned by *Ariſtotle*: And it will be impoſſible to infer one rational Propoſition by any Logick from Principles thus premiſed. L. 1. c. 3. L. 1. c. 10. and l. 6. *of the Soul.*

Now let us conſider what kind of Conſequence will follow, from Principles premiſed by *Ariſtotle. Ana. Poſt.* he ſays, a Man is an Univerſal; and *Ana. Poſt.* l. 1. c. 31. tit. 1. ſays, Univerſals are every-where, and cannot be perceived by Senſe. Now put theſe together, and obſerve the Conſequence. L. 2. c. 19. tit. 7.

Univerſals are every-where, and cannot be perceived by Senſe.
A Man is a Univerſal.
Therefore a Man is every-where, and cannot be perceived by Senſe.

As the Soul of living Creatures, being an Active Cauſe or Power, cannot be defined; ſo the particular Principles of Senſe, Memory, Love, Hatred, Fear, Joy, Grief, Hunger and Thirſt, *&c.* which are common to Man and other Creatures, are ſo naturally underſtood, that by defining them you will either miſtake them or make them leſs intelligible.

Petitions required to be in him who Learns and Reaſons are Four-fold.

Firſt, That he underſtands the Conſtruction or Signification of Speech ſpoken to him by Words to his Senſe of Hearing; or by Letters or Figures to his Senſe of Seeing: and therefore if a Man be Negatively or by Accident, voyd of underſtanding, all inſtruction in any Art or Science will be in vain.

Secondly, That he Sees, Hears and Remembers. It will be in vain therefore to inſtruct a Blind man to be a Painter, a Deaf man to be a Muſitian, or a Forgetful man to keep Accounts.

Thirdly, That he who is to be inſtructed, hath a Power of

doing thoſe Actions which ſhall be required of him. It will be in vain therefore to teach a man Lame in his Feet to be a Dancing-Maſter, or a man Lame in his Hands to be a Fencer, *&c.*

Fourthly, That he who Learns be willing or diſpoſed to be inſtructed. For no Man can be Learned if he will not be inſtructed, nor endeavour to be ſo.

Petitions underſtood to be in the Nature of Man, wherein it agrees with that of other Creatures.

Petition 1.

Man is Naturally a living Creature. By living Creature I underſtand, a Soul United with a Body; and I ſay, Man is Naturally ſo, *viz.* by an immediate inſite Power, not Learned or Taught by any Creature; yet is not this proper to Man, but common to almoſt infinite other Creatures, Aiery, Watery and Earthy.

Petition 2.

The Soul of Man and all other living Creatures is Active, and gives Life and Motion to the Body and all the Parts of it.

Petition 3.

The Body of Man and all other living Creatures, is Paſſive, and receives Life and Motion from the Soul.

Petition 4.

The humane Soul, and the Soul of all other living Creatures, is underſtood and cannot be perceived by Senſe.

Note,

An. Poſt. 2. c. 19. tit. 19.

Ariſtotle ſays, *There is nothing in the Underſtanding which was not before in the Senſe*; thereby not onely confounding the different faculties of the humane Soul, which wiſe Nature abhors, but makes the underſtanding, Senſe at ſecond-hand; and by conſequence all other Creatures, whoſe Senſes are more exquiſite, more excellent than Man.

But a little Grammar might have taught *Ariſtotle* better Logick. For of eight parts of Speech, onely Noun Subſtantives or Senſible things expreſſed by a certain name can be the Object of Senſe. For Example: a Man is a Noun Subſtantive, and may be ſeen and felt, *&c.* by other Senſitive Creatures as well as Man. But the Underſtanding, Will, Memory, Love, Hatred, Fear, Joy, Grief, Anger, Covetouſneſs, *&c.* in Man, are all Noun Subſtantives, but can never be perceived by Senſe. And

And as these insite Natural Properties and Attributes in Man are understood; so Attributes which happen to different Men by accident; as King, Father, Husband, Wife, Uncle, Bishop, Priest, Constable, &c. are all Noun Substantives, and understood, but cannot be perceived by Sense.

If *Aristotle* had said there is nothing in the Memory, which was not before in the Sense, he had shot nearer the Mark, but not hit it. For though sensible things, sounds and actions, must be seen or heard before they be remembred; yet I may remember my Conceptions and Intentions, &c. which were never the Object of my Sense, nor of any other Creature.

Petition 5.

The Body of Man and all other living Creatures is sensible, and cannot be understood.

Petition 6.

Neither the humane Soul, nor the Soul of any other living Creature, hath any part, or can be divided.

Petition 7.

The Body of Man and all other living Creatures, hath different Parts, and may be divided in all the Parts of them.

Petition 8.

The humane Soul, and the Soul of all other living Creatures, hath a different operation, in all the differing parts of the Body. The same Soul sees in or by the Eye, hears in the Ear, smells in the Nose, tasts in the Palate, and feels in every part of the Body, &c.

Petition 9.

The humane Soul, and the Soul of all other living Creatures is unalterable; but does by an Innate or Natural Power, continually alter the Body, towards the end designed by such alteration. The humane Soul alters the first imbred Water, into leaping and living Blood, and out of that, by disposed matter in the Conception of the Parent, forms an Organical Body, which it alters into Infancy, Childhood, Youth, Manhood and old Age.

Petition 10.

Man is Naturally a sensitive Creature, *viz.* does Hear, See, Smell, Tast and Feel. I say, Man is Naturally a sensitive Creature: the Eye is not learned or taught to see, nor the Ear to hear, &c. But though Man be a sensitive Creature, yet there are almost infinite other living Creatures which are

Naturally

Naturally ſenſitive, though not endued with like number of Senſes, or of equal power. Fiſhes ſee, taſt and feel, but neither hear or ſmell. Hawks and many other Fowl, ſee much more ſubtilly and further than Man; and Dogs, Brocks, Foxes, and it may be many other Creatures ſmell, taſt, hear and feel, more than Man.

Petition 11.

Trees and Plants are not ſenſitive Creatures naturally.

Petition 12.

Man and all other ſenſitive Creatures are naturally remembring Creatures.

Note 1.

Memory is the Repoſitory of the Soul, wherein ſhe retains ſounds, things and actions perceived by any of the Senſes, when theſe ſhall be removed from Senſe. But I cannot tell whether other living Creatures remember the Internal motions and actions of their Soul.

Note 2.

That the Memory retains things, actions and ſounds, as they were perceived by Senſe, in all their circumſtances, without adding to, or taking from them; and therefore every Speech of Actions done, will not be true, if it addes to, or leaves out any part of the Act done. For my part, I deſire to expreſs Beings, either Intelligible or Senſible, and the Faculties and Attributes of the Soul, ſo as that this name may ſignifie this being or facultie and no other. Whereas *Ariſtotle, Ana. Poſt.* ſays, *Memory is made by Senſe, and out of often remembrance of the ſame thing, is experience or an Univerſal made:* Whereas though things and actions muſt be before remembred, yet there muſt be a remembring power in the Soul, before theſe things or actions were preſented to Senſe. And whereas he makes Experience to be of often remembring the ſame thing, he miſtakes Experience and Memory too: for Experience is a Tryal of the Effect or Conſequence which will follow, upon ſome Act done upon ſome ſenſible thing; and neither Senſe, or Memory can foreſee future events and conſequences. And whereas here he makes Memory to be from Senſe, and an Univerſal to be from Experience, *Ana. Poſt.* he ſays, *Univerſals are every where and cannot be perceived by Senſe*; and in his firſt Chap. of Memory and Forgetfulneſs, he ſays, *Memory is of things paſt*, and in the laſt

L.2. cap. laſt.

L.1.c.31. tit. 1.

Chap.

Chap. of his *Ana. Post.* 2. says, *Memory is before Experience.*

Petition 13.

Neither Trees or Plants, Naturally remember.

Petition 14.

Man and all other sensitive Creatures, have Naturally a power of moving their Bodies,and every part of them,by the Organs which Nature designed for outward Motion.

Note,

All outward Actions arise from inward Powers, the Power is the same, before as well as in the Act. From this Power, by such Organs for Motion, as Nature had before Ordained, do's Man and all other sensitive Creatures move theirBodies,in whole, or in part: And these Organs or Instruments of Motion, being different, in differing Creatures, they move in divers manners. Fishes move theirBodies in waters by Fins; Fowl by two Legs and two Wings; Man by two Feet; but all other Earthly Creatures, by four or more Feet. So Man and all other sensitive Creatures differently move the parts of their Bodies as the Organs differ.

Petition 15.

Trees and Plants have Naturally no power to move their Bodies, in whole or in part, nor any Organs or Instruments for Motion.

Petition 16.

The humane Soul, and the Soul of all other sensitive Creatures, Naturally love their Bodies above all other things.

Consequence.

From this Natural Love of the Soul to the Body, it grieves in all Hurts which happen to the Body, or any part of it, either by Natural or Voluntary Chance; and joyes and delights in those Things and Actions which preserve their Bodies; and hates and fears those Things and Actions which endanger the Hurt of the Body, or any part of it. And the humane Soul grieves and laments the Natural Alterations and Decays of the Body, which she makes in it.

Note,

I do not understand, why Love, Hatred, Joy and Grief, are termed Passions of the Soul, which is Active; and *Amo, Timeo, Odio, Gaudeo & Doleo,* are Active Verbs.

Petition 17.

The Bodies of Man, and other Creatures generally are

clad or covered with Skins, which are endewed with little or no Blood, and are Porous.

Note,

Trees are Covered with Bark, and Graſs and all other Plants, with a thin Film, which are Porous.

Petition 18.

The Soul of all ſenſitive and inſenſitive Creatures, does by Natural power continually ſend out the ſubtileſt parts of their Bodies, through the Poars of their Skins, Barks, & outward Films.

Note,

Though this Emiſſion cannot be perceived by the Senſe of Seeing; yet in Trees and Plants, it is by the Senſe of Smelling; ſo in Goats, Foxes, Bears, and many other ſenſitive Creatures, their ſubtile parts ſent out of their Bodies, may be ſmelt by Man; and alſo thoſe of Red-haired, and Fulſome Men, and more of Women; and as the Soul of living Creatures, does continually ſend out the ſubſtance of their Bodies through the Poars; ſo does Fire ſend out the ſubſtance of its Body in Smoak.

It is obſervable how much more exquiſite the Senſe of Smelling is in other ſenſitive Creatures above Mans. From this Emiſſion of the ſubtiler parts of Bodies, Hounds hunt the Hare, Dear, Fox, *&c.* by thoſe ſent out of their Feet; ſo Spaniels hunt the Partredge and Feaſant, *&c.* and ſet them, by ſmelling thoſe parts ſent out of their Bodies, at a great diſtance.

It is alſo very obſervable, that as Mens Faces Naturally and Senſibly differ from one another, ſo does theſe ſubtile parts ſent out of their Bodies. Take a Lined Hound or Spaniel, and bring him to a place where a Man has lately ſate, and encourage him, and he ſhall perſue and overtake him, from the Emiſſion of theſe Particles, ſent through a three Soaled Shooe, though five hundred Men and Women, have gone and come between. If a Dog has loſt his Maſter, and many other Men be in a Room, or other Place, the Dog will diſtinguiſh his Maſter from the reſt, by ſmelling.

Petition 19.

The Soul of all Senſitive Creatures, does Naturally repair their Bodies by the Juices of Food received into their Stomack, and converted into the ſubſtance of their Bodies.

Note,

As Trees and Plants are continually ſending forth the ſubtileſt parts of their Bodies, ſo they repair their Bodies by diſpoſed

ſpoſed Water, ſucked into their Roots, and from thence upward ſent, and converted into the ſubſtance of their Bodies. So does Fire repair its form, by new matter converted into it, to ſupply what was before ſent out in Smoak.

Petition 20.

All ſenſitive Creatures Naturally Hunger and Thirſt for Food to repair and nouriſh their Bodies, for the expence which is continually ſent out of their Bodies. And ſo does Fire.

Petition 21.

All ſenſitive Creatures do Voluntarily ſeek Food, by the Organs of Motion, which Nature had Ordained.

Note,

I ſay, All ſenſitive Creatures Voluntarily ſeek Food. An out-lying Dear when he goes out of a Wood to Feed, will firſt hold up his Head and Vent; and if he fears any danger returns into the Wood again. So all other ſenſitive Creatures, if they be afraid, forſake Feeding and flee the Danger; and it is from this Voluntary Motion of the Bodies of living Creatures, that Man by Art and Experience makes ſenſitive Creatures to be uſeful to Man; and in vain would be all inſtruction in any Art if you ſuppoſe a Man could not Voluntarily move his Body, and all the parts deſigned for outward Motion.

Petition 22.

The Motion of the Bodies and Parts of ſenſitive Creatures, is neceſſary in ſeeking Food.

Note,

This Petition is evident if we conſider, that the Food Naturally deſigned for ſenſitive Creatures, is in different Places, and Creatures could not ſeek it, if their Bodies could not be voluntarily moved.

Petition 23.

Trees and Plants, have no need of Organs or Inſtruments of Motion to ſeek Food, being nouriſhed in the ſame place where they grow.

Petition 24.

No living Creature ever made or provided Food for its ſelf; yet Food which was before, may be prepared to be other-ways than what it was, and compounded and divided.

Petition 25.

The Senſes of ſenſitive Creatures, are neceſſary in ſeeking Food in ſeveral places.

Petition

Petition 26.

Trees and Plants have no need, or neceſſity of Senſes to ſeek Food in other places.

Petition 27.

There is a Three-fold Blood in all ſenſitive Creatures, *viz.* Arterial, Venal and Outward. The Arterial Blood, is contained in the Arteries wherein it continually leaps and moves forwards; the Venal Blood, is ſent out of the Arteries into the Veins, wherein it continually circulates or moves,
Ex. *LI.* Dr. *Harvey* ſays, *by the Suction of the Deaf Ears of the Heart*; and I ſay, by the lively Power it had from the Arteries, and the Deaf Ears of the Heart. The Outward Blood, is that which
Ex. *LI.* *near the end.* Dr. *Harvey* ſays, *is every-where diffuſed in every part of the Body*, (I ſay, within the Skin) *ſo as you cannot prick through the Skin in any part of the Body, but this Blood will flow*; and as the Arterial Blood continually in its Circulation ſupplies the Venal Blood; ſo the Venal Blood in its Circulation, (by Perſpiration I ſuppoſe, for there are no Veſſels leading to it) continually ſupplies the Outward Blood. This Blood I ſay, is in perpetual Circulation or Motion, and in it Circulation ſends out the finer parts of the Body through the Poars of the Skin.

Note,

Theſe Bloods in the Bodies of ſenſitive Creatures, reſemble the living Bodies of the Waters of this Habitable Globe. The Arterial Blood reſembles the moving Body of the Ocean. The Venal Blood, the Waters conveyed by Subteranean Cells, into all the parts of the Earth, at Low-water-Mark. Theſe Waters covered with the Outward Earth, reſemble the Outward Blood, covered with the Skin; and as the Outward Blood continually ſends out of the Body its moſt ſubtile parts affected with all the parts of the Body; ſo theſe Waters through the Poars of the Earth, continually ſend out of it, their more ſubtile parts, affected with all the parts of the Earth, through which it paſſes.

Petition 28.

The Arterial Blood, is Naturally the firſt living Body in all ſenſitive Creatures.

Note,

Ex. *LV.* Dr. *Harvey* obſerves, that the firſt appearance of Life is upon the converting the firſt inbred Water into Beating Blood, which hath all the parts of the future body in power, but none in Act.

Pe-

Petition 29.

The Outward blood, is the laſt dying part of ſenſitive Creatures.

Note,

This Petition is evident if we conſider, that after the Pulſe ceaſes, a declining heat remains which is yet retained in the Outward blood, ſo long as it moves; and when this Motion ceaſes, then the Body becomes ſtark cold. I remember when I went to School, I did obſerve after the Butchers had killed their Cattle and drawn all their bloods out of their Arteries and Veins, and cut off their Heads, that in Fleaing off their Skins, a trembling was in all the Outward parts of their Bellies, which continued leſſening, till the parts became cold, and then it ceaſed; which could not ſucceed from the blood in the Arteries or Veins, for then there was none in them.

Petition 30.

The Arterial blood of ſenſitive Creatures, is enlivened and moved by breathing Air, as it is affected by Particles ſent out of the Earth, Water and other Bodies.

Note,

Here ſtay a little, and in Admiration Contemplate this wonderful Body of the Air, which as far excels the innumerable ſenſible Bodies of the material World, as it exceeds them all, almoſt infinitely in quantity. Other Bodies terminate the Sight; but through the Air, the Eye ſees all other Bodies. This is that Body, which without any emptineſs continues all the Bodies of the Univerſe into one World.

In this Body is every where diffuſed a Soul, which ſuſtains the weight of all the other Bodies, and all things in them of the material World; and by an Inimitable power Governs the Heavenly Bodies, which move in the Concave or Hollow of the Univerſe, in ſuch conſtant, yet varying Motions, as Eternally to create Times and Seaſons.

This Soul Governs the Motion of the vaſt Body of the Ocean, into a perpetual Ebbing and Flowing, and yet reſtrains it in its bounds, and ſearches into the Bowels of our MotherEarth; and from thence brings the greateſt Rivers out of higheſt Hills, and returns them into the Sea from whence they came.

And though it ſuſtains the weight of all the Bodies of the material World; yet it receives into the Air, all the Particles ſent out of the Earth, Water and other Bodies, and then

hurries them into Winds, which blow from all the varying Points of the Compaſs: and this Air thus affected, animates and moves the Arterial blood, by breathing, *viz.* by receiving it into the Body, and ſending it out again.

And as this outward Air thus affected, does animate the Arterial blood, by a conſtant ſucceſſion of taking it into, and ſending it out of the Body; ſo it does Fire: and therefore if Fire be denyed ſucceeding Air it will dye, as well as the Arterial blood, if ſenſitive Creatures do not breath.

Petition 31.

The outward Air will ſo much more enliven the Arterial blood, by how much more it ſhall be affected by cooler Particles, or Vapours ſent out of the Earth, Water or other Bodies.

Conſequence.

From hence it is that all ſenſitive Creatures breath leſs in Winter and cold Weather, than in Summer and hotter Weather. You may obſerve Ravens, and many other Fowl in Summer, breath and pant with open Mouth; ſo Sheep, Dogs, and many other Creatures in the heat of the Day, get in Summer time into cool ſhady places, and lye at eaſe, yet pant and breath with open Mouth, which they never do in Winter and cooler Seaſon. And the Air affected by Vapours ſent out of Sandy Soils, leſs enliven the Arterial blood, by how much deeper theſe Soils lie from Subterranean Water.

Petition 32.

The outward Air will ſo much more enliven the Arterial blood, by how much more it ſhall be affected by purer and freſher Vapours.

Note,

Vapours are ſo much purer, as they are ſent out of purer and moving Waters, and Waters are ſo much purer, as they run in purer and cleaner Soils: Whereas thoſe Vapours ſent out of ſtanding corrupted Water, are more groſs, and by breathing leſs enliven the Arterial blood; and ſo much leſs, by how much ſtanding Waters are in more dirty and filthy places.

So the Air affected by Vapours ſent out of Flowers, Trees and Plants, does more enliven the Arterial blood, than when it is affected with Vapours ſent out of dead Bodies, and Dunghils, *&c.* and is ſo much freſher, by how much leſs it is affected by the breathing of other ſenſitive living Creatures,

and

and the Particles ſent out of their Bodies, by the Outward blood.

Petition 33.

The Arterial blood does concoct and ſever the Juices of Food in the Stomack from the groſſer parts, by an Inſite or Natural power.

Note,

So does Fire concoct and ſever the thinner parts of Wood, and Coal, by an Inſite or Natural power; and does melt and ſever the parts of Oil, Tallow, Wax, Pitch, Tar, and other combuſtible Matter, which conſiſt of like parts.

Petition 34.

The Arterial blood does ſuck the concocted and ſevered Juices of Food out of the Stomack, into its own Body, by a Natural power.

Note,

So does Fire ſuck the concocted and ſevered thinner parts of Wood and Coal into its own Body by a Natural power; and alſo melted Oil, Wax, Tallow, Pitch and Tar, *&c.*

Petition 35.

The Arterial blood, in its Motion or Circulation, does convert the Juices of Food, ſucked out of the Stomack into its own Body, by a Natural power; ſo does Fire convert the matter drawn out of Wood or Coal, *&c.* into its own Body, by an Inſite or Natural power.

Note,

The Arterial blood thus continually ſupplied by converting other matter into its own Body, is the Fountain from which the Venal and Outward Blood flow. The Complexion of this blood as it is a living Body, is Florid or Red, but more or leſs immediately after Feeding, and longer Faſting; immediately after Feeding, it is leſs Florid, and grows more by longer Faſting. But if this blood be let out, ſo as to ceaſe to be a living Body; you may obſerve it is compounded of unlike parts, whereof the Florid is the leaſt. In theſe unlike parts is contained a power of Nouriſhing all the unlike parts of the Body, whenas in Act, it nouriſhes none of them.

Petition 36.

Neither the Arterial or Venal blood, does nouriſh the other parts of the Bodies of ſenſitive Creatures.

Note,

This Petition is evident in that nouriſhment is an immediate con-

conversion of one Body into another; and therefore it is impossible the Arterial or Venal blood, should nourish the Outer parts of the Body, whenas their Vessels lye between.

Petition 37.

The Outward blood in its Circulation, does continually suck into its own Body, the finest parts of the other parts of the Bodies of sensitive Creatures, and nourish them with other matter, it received from the Venal blood. So does Fire nourish its Body by other matter, to supply the expence of Smoak.

Consequence.

From hence it follows, that the substance of the Bodies of sensitive Creatures, never remains the same, but Bodies are continually altering from what they are, towards what they shall be, by such alteration.

Note,

As the Outward blood in its Circulation or Motion, does continually suck out of the other parts of the Body, their more subtile parts; and so does running Water in Rivers and Springs. In the same River where the Soil is dirty, so will be the Water; and when it runs in clean Gravelly or Stony places, it becomes clean, yet sucks the most subtile parts of the Stone into its own Body; so as a Man by tasting may find the difference. So all Spring Waters are affected in their flowing out of Fountains with a tincture of the Soils they last run through, which being infinitely different, so are the Waters.

Petition 38.

The Outward blood in its Circulation, does continually send out of the Body, the more subtile parts it received from the other parts of the Body, through the Poars of the Skin.

Note,

Here the Outward blood resembles the Body of Waters which lye every-where diffused in the Earth at a Low-Water-Mark or Level with the Sea at the Lowest Ebb. And also Fire, which sends Smoak out of its Body affected with the matter, which had before Burnt.

Petition 39.

The Skin of sensitive Creatures, is nourished by the Particles sent out of the Outward blood.

Note,

As the Particles which nourish the Skin, are no part of the blood

blood, but ſent out of it before they come at the Skin; ſo does the Skin lye out of the other parts of the Body; and ſo hath little or no blood in it; And may be termed a covering of the parts of the Body, rather than any part of it.

Petition 40.

The Venal blood in its Motion or Circulation, does farther prepare and concoct the Juices which the Arterial blood conveyed into it, for nouriſhing the Body.

Note,

You may call this the ſecond Concoction of the blood: I am ſure the Circulation of the Venal blood, is not in vain; and if any man can Aſſign any other end of it; I am content, and will thank him for it.

Petition 41.

By the ſame power which the Arterial blood, ſucks the rarified Particles of the Juices of Food, out of the Stomack into its own Body; it ſends the groſſer parts into the Guts, and out of them, by Stool.

Note,

So does Fire ſend the Sap of Green Wood, which it ſucks not into its own Body, out at the ends of the Wood.

Petition 42.

Joy, Grief, Love, Hatred and Fear, are Principally ſeated in the Outer blood.

Conſequence.

From hence it is, in Joy the Outward blood expreſſes it in a more lively and pleaſing aſpect in the face of Men; and ſends forth Tears and Complaints in its Griefs; and in Hatred it appears Fierce; and when it Fears it retires into the more Inner parts of the Body. The Outward Senſes, perceive outward Actions and Things; but the Outward blood, Joys, Loves, Hates and Fears them, and Grieves for the Loſs and Hurts of things it Loves. I have obſerved a Deer, when Hunted, ſtand Trembling in all the parts of its Body, which could not be expreſſed but by the Outward blood; ſo Man and other Creatures often Tremble in all the parts of their Body, when they are afraid.

Petition 43.

The Senſation and Outward Motion of ſenſitive Creatures, is Principally ſeated in the Outward blood.

Note,

So that the Eye, Ear, Noſe, Pallate, *&c.* are the Inſtruments

by which the Outward blood, Sees, Hears, Smells and Taſts, and alſo Feels in every Outward part of the Body; and therefore when Life or Motion ceaſe in the Outward blood, neither the Eye ſees, Ear hears, *&c.* nor any part of the Body Feels.

I ſay, all Outward Motion, is ſeated principally in the Motion of the Outward blood; and therefore if you tye a String ſo hard below the Joynt of your Finger, or any other part of your Body, which hath an Inſtrument of Motion, ſo as the Outward blood cannot move, you may obſerve the place turn Blackiſh, and the Joynt deſtitute of Motion; both which are cauſed by the not moving of the blood in the part.

As this Outward Blood is Naturally more pure, ſo the Actions of thoſe Creatures are more Strong and Lively; and that when in the ſame Creatures theſe purer parts are ſent out of the Body, by over-much Labour or Action, all the Organs or Inſtruments of Motion, become leſs moveable. So that if a Dear, Hare or Fox, *&c.* be Hunted ſo long, that the fineſt parts of this Blood be ſent out of their Bodies, they cannot move their Bodies, though all the Inſtruments of Motion remain.

It is obſervable, how the Venal and Arterial Blood ſucceed to ſupply the Expence of the Outward Blood by violent or extream Action. If a Deer be Shot, abundance of blood will iſſue from his Arteries and Veins when his Throat is cut; and the Fleſh looks of a paliſh Red colour; and his Fat exceeding White: whereas, if a Deer be hunted and tyred, not one third part of the blood ſhall iſſue by cutting his Throat; but all the parts of his Fleſh are more Red and full of blood, and the Fat compounded of Redneſs, as well as Whiteneſs.

Note,

Ex. *LVII* The inſite Wiſdom which is in the Outward blood. Dr. *Harvey* finely obſerves, *That if you take many Needles, the point of one of which, you know not which, is Poyſoned; and if you prick through the Skin with any of the other Needles, Blood will flow, with little trouble: but when you prick with the Poyſoned Needle, you ſhall perceive a Red Tumour ariſe round about the prick; the blood thereby deſigning to Beſiege the Venome, that in its Circulation, it may not affect the whole Maſs of the Outward Blood.*

In

In this blood is that insite Wisdom, whereby Birds, not Learned or Taught by any Creature, build their Nests; and which instructs Hares, Deer, and other Creatures to flee from those things and Creatures which are Enemies to them, so soon as they see them; and all the day long to hide themselves, for fear of being Hunted or Coursed, before they were either Hunted or Coursed. By this Wisdom in this blood, Creatures of Prey, know what Creatures are more proper for Food; and other sensitive Creatures distinguish the sorts of Grass and other Plants, which may better nourish their Bodies.

Petition 44.

All sensitive Creatures Sleep.

Note,

Sleep is the Repose of sensitive Creatures after Labour, whereby all the bloods in their several Offices endeavour so to nourish and repair their Bodies, as to enable them to seek Food after Waking; and that the blood may be more intent herein, the Outward blood shuts their Eyes, stops their Ears, that it may not be diverted in this end; and lays their Bodies at the most easie Posture from Action.

Petition 45.

Trees nor Plants Sleep; nor have any need of it.

Petition 46.

If any of the bloods of sensitive Creatures shall cease to Move or Circulate, it will be corrupted.

Petition 47.

If all the bloods of sensitive Creatures, shall cease to Move, all the other parts of the Body will Dye.

Petition 48.

In the Death of sensitive Creatures, all their bloods cease their Natural Motion.

Petition 49.

Man is naturally Male and Female, and a fruitful Creature, *viz.* endued with a power of begetting another of his own Kind; yet is not this proper to Man onely, but common to almost infinite other sensitive Creatures.

Note,

That in the Generation of more perfect Creatures, Coition by Male and Female is generally necessary, and Dr. *Harvey*, *Rightly distinguishes between Geniture and Seed*, Geniture is that which flows from the Male into the Womb of the Female

male in Coition; Seed is that which is Conceived in the Womb of the Female. This Seed or Conception is that
Ex. LXII which the Doctor *Calls an Egg*, and is not onely the common Principle of all living ſenſitive Creatures, but of Trees and Plants. This Egg or Conception, in which the future Off-ſpring of all ſenſitive Creatures is contained, is Two-fold, *viz.* Viviparal, and Oviparal: Viviparal, is when the future Off-ſpring is formed and nouriſhed an Organical Body in the Womb of the Parent; ſuch is Man and all other more perfect Earthy Creatures; or Creatures without Wings or Feathers; ſo are Whales, Dolphins, Porpices, Skates, and it may be many other ſorts of Fiſh. Oviparal Conception, is when the Parent expoſes her Egg or Seed, in which the future Off-ſpring, is onely in power, and no part of an Organical Body is formed: ſuch are the Conceptions of all ſorts of Fowl, and generally of Fiſh.

Petition 50.

Coition, is a voluntary Act of the Male and Female of all ſenſitive Creatures.

Petition 51.

The Generation, or Forming the Parts, of the Off-ſpring of ſenſitive Creatures, is a Natural Operation. And Nature or the Soul of the Off-ſpring performs this wonderful Work, not onely without any Organs or Inſtruments of Motion, but forms all of them; whenas before were none of them. And ſo abſolute herein is Nature, that ſhe performs this Office in the inner Cloſet of the Conception, wherein no Man preſumes to look, without diſtroying the End deſigned by Nature in Oviparal Generation; and of the Parent, as well as Off-ſpring, in Viviparal.

Petition 52.

But though Coition be generally neceſſary to the Generation of more perfect Creatures, yet it is not Univerſally ſo; for all Oviparous Fiſh do not ingender or admit of Coition; but the Male expoſes his Milt upon the Row or Conception of the Female, after it is emitted or ſent out of her Womb; which hath the ſame Power or Efficacy, as the Geniture of the Male injected into the Womb of the Female in the Generation of other more perfect Creatures.

Petition 53.

Though Sexes are neceſſary in the Generation of more perfect Creatures, and Coition generally neceſſary; yet ma-

ny

ny Insects and more imperfect sensitive Creatures are Generated out of the disposition of matter of their own accord (as they say) without either Coition or Sexes; as Froggs in the Spring, and often in the Air; so Catterpillars out of Leaves in the Spring; and many sorts of strange Creatures, out of the Mud of the *Nile*; so Fleas and Lice, out of nasty Bodies and Places; and many sorts of Worms in the Earth and dead Carcasses; but though these be Generated of their own accord, yet they Generate into Sexes, and Ingender afterward, with one another. Onely the Eel if you believe *Aristotle*, of all Creatures with blood, is Generated, but never Generates; and for my part I never saw Milt or Row in any of them. *Hist. An.*

Petition 54.

As Sexes and Coition are not always necessary to the Generation of Insects, and more imperfect sensitive Creatures; so are they never necessary in the Generation or Production of the Seeds of Trees and Plants, but their Kinds are preserved in other Bodies, by the Innate or Natural Plastick or Forming Power in their Seeds, which of its own accord makes them Fruitful.

Petition 55.

Nature designs more perfect Creatures generally in their Generations either Oviparous or Viviparous, as Fowl, and Cattle, to be useful to Man for Food.

Petition 56.

To these Petitions I require any unquestionable Authority, and Record of Times to be a mean or middle Proposition in any Demonstration, or Scientifical Sillogism.

APOLOGY.

SInce the Question of every Rational Propoſition, is determined from Antecedent Premiſes and Principles, of which there is no Queſtion: whether thoſe Principles do ariſe immediately in the Underſtanding, or by Senſe, Contemplation, Obſervation or Experience: and that every Act is done by ſome Agent, which may be expreſſed by a certain Name; and ſince it is evident that all the fixt and Permanent parts of the Bodies of Senſitive Creatures, are Nouriſhed from Juices of Food, received into the Stomack, which is the moſt Inward Part of the Body; and from thence drawn and diſtributed into the Nouriſhment of all the Parts of the Body; which we have Affirmed to be done by the perpetual Circulation of the Bloods, in their ſeveral Offices. If any Man can Aſſign theſe Offices to any Power, in any other Part of the Body, then that of the Blood; let him enjoy the ſame Freedom I have done. Yet I do Affirm, if he denies theſe Petitions Affirmed of the Blood; and Aſſigns the Faculties of the Blood, to no other Part of the Body, he ſhall never give any Reaſon of the Nouriſhment of Bodies, or of any Practice in Phyſick, or by what means Health may be continued, or reſtored. I deny, it will be the Opponents part to prove, or do.

OF

Of Universal Propositions,
OR
AXIOMS.

PEtitions in themselves are so Barren, that without the Conjunction or Copulation of a Superiour and Nobler Cause, they are not made Fruitful with Rational Knowledge. These Principles from their Excellency are stiled Universals, Dignities, Axioms, common Notions or Conceptions, *&c.* In these Principles you do not propound Things, Powers, Agents, Actions or Beings, expressed by any certain Name, but Universals, not naming any Thing, Power, Agent, Act or Being, by a Name. And as the Heavenly Powers have no effect, but as they meet Matter disposed to receive their influences; so neither do Axioms produce any Rational Conclusions, but as they meet with Petitions or Rational Propositions particularly disposed, to be determined by them.

Axioms in Geometry are Two-fold, 1. *Natural*, 2. *Accidental.*

First, Natural Axioms are Governed by a Verb of the present Time; yet so that what is affirmed was ever so and ever will be so: As the whole of every thing is more than a part of that thing; The part of any thing is less then that thing: But these Axioms are rarely of never used in a Demonstration; yet stand as eternal Buoys or Beacons, to give notice that every Speech or Proposition, which immediately or by inference shall contradict any of these, will be broken into absurdity or impossibility.

Secondly, Accidental Axioms in Geometry look forward, and foretel what will be the Event or Consequence of things and Actions, so propounded; and are best Governed by two or more Verbs of the future Time; as if equals shall be taken from equals, what is left will be equal. If things shall be equal to the same thing, these things will be equal, *&c.*

Note 1.

Note 1.

Clavius makes twenty Axioms before the first Book of *Euclid*, whereof two, *viz.* the 10 and 11 he says, are none of *Euclids*; But whether the 10 and 11 be *Euclids* or not, *neither* 10, 11, 12, 13, *or* 14 *are Axioms, for they do not Universally Propound but of Right Lines and Angles. And as* Euclid *in his* 4th *Petition Propounds, if one Right Line shall fall Perpendicular upon an other, the Angles on both sides of the Perpendicular Line, will be Right Angles*; and in his 15 Definition, *That all Right Lines drawn from the Centre to the Circumference of the same Circle, to be equal*; which are so by Petition, not Definition; so his 10 Axiom, *That all Right Angles are equal among themselves*; and his 11 Axiom; *That if two Right Lines shall cut one Right Line, so as the Inward Angles shall be less then two Right, these Lines may be produced till they shall meet*; can never arise higher then to be Petitions, and the lesser or mean Propositions in a Demonstration. But his 12 Axiom, as he calls it, *That two Right Lines do not comprehend space*, is so far from being either Axiom or Petition, that admitting it, all the Doctrines of Right Lined Angles would be impossible; for if a Right Lined Angle be not space, it is nothing; and I am sure nothing but two Right Lines comprehends it.

And it is very observable, that so great a Philosopher and Mathematician as *Clavius* was, should be so little acquainted with himself, as to say, in the last Chapter of his Proem to the first Book of *Euclid*: *That all Learning and Discipline should be begotten from fore Knowledge, and from certain assumed and granted Principles, demonstrate their conclusions.* And so soon after pretend to demonstrate his pretended Tenth and Eleventh Axioms, which he says, are none of *Euclids*.

'Tis no wonder therefore that Geometry is rendred so perplext, and no method of Reasoning observed in it, whenas the Principles are so jumbled; yet would not I find fault, either in the establishing the Principles, or disorder in Reasoning in Geometry, if I could not Correct the Principles, and observe a method of Reasoning in it.

And as *Euclid* is too niggardly in his Petitions, so is he in his Axioms: For he does not premise, *If any thing shall be greater than another, the equal of that thing, will be greater than this other.*

If

Of Universal Propositions, or Axioms.

If any thing shall be less then another, the equal of that thing, will be less then this other.

If any thing shall be greater than another, that thing will be much greater than a part of this other.

If any thing shall be less then another, a part of that thing will be much less than this other. Without which Axioms it will be impossible to Demonstrate the the 7, 16 or 18 Propositions of the first Book of *Euclid*, or any other Proposition, whose Demonstration depends upon any of them.

Note 2.

Aristotle Ana. Post. Says, *By Sense, Memory is made*; *and out of often Remembrance of the same thing, Experience or an Universal is raised.* Let this be expressed in plain English: By my Sense of Seeing, I remember a Cow; and by my often remembrance of the same Cow, is, *If things shall be equal to the same thing, these things will be all equal*, raised; which if it be, let any Man in his Wit's judge. L. 2. c. last.

Axioms which govern these Petitions, are not onely universally of Things, but Powers, Agents and Actions, (for Agents, as God, the Soul, *&c.* may not be Things; and Actions cannot be Things,) expressed by no certain Name; and also of Causes in and of Things and Actions, universally.

These Axioms are Affirmative and Negative, and as in Geometry, are either Natural, which are best governed by a Verb of the Present time; or Accidental, which are best governed by two or more Verbs of the time to Come.

Axioms, or Common Notions.

Axiom 1.

Every Thing or Agent, necessarily hath a power of Doing, before any Act can be done by that Thing or Agent.

Axiom 2.

If Things or Actions shall not be in the power of the Agent, all inquiry and endeavours, how to do them will be in vain.

Axiom 3.

The Acts or Works of Nature, cannot be done by any Creature.

Axiom 4.

As the Causes shall be in, or of Things or Actions, so will be their Effects.

Axiom 5.

If the Causes of or in Things or Actions, shall cease, so will the Effects.

Axiom 6.

If things shall be at continual expence or spending; these things will be consumed or starved, if they be not repaired by other Matter or Things.

Axiom 7.

If the enquiry how Things and Actions may be done, shall be in vain; All endeavours how to do them will be Foolish.

Axiom 8.

If the Actions or Motions in Things shall cease; All observations of them will be in vain.

Axiom 9.

All things which cannot supplie themselves with necessaries they want to continue their Beings, do depend upon another Being.

Axiom 10.

Every Act which shall be done against the good End or Design of Nature, will be a wicked Act.

Axiom 11.

Every Being which shall not be able to supplie its being of those things it wants, will depend upon a more Noble and Being.

Axiom 12.

The Works of Nature, in things are derived from a higher power, than is in those things.

The Principles thus established, Men by some certain Method or Order of Reasoning begin to Learn and Reason: but herein I shall not observe *Aristotles* Logick, having already shewed, in the Notes upon *Clavius* his Scholium upon the first Proposition of the first Book of *Euclid*; that it is impossible, any Reasonable Conclusion, either in Demonstrative or Probable Reasoning, can be inferred from it; nor was it ever done either by *Aristotle* or any of his followers, in these near 2000 years since he wrote, although he took so much extraordinary Pains in his *Analyticks*, *Priorium*, *Posteriorums*, *Topicks*, *Physicks* and *Metaphysicks* to do it. Whereby as no Progression of Rational Knowledge could be ever observed; so all those manifold Sects and Factions among the Peripateticks did arise from this *Aristotle*, as branches

from

from the same Trunck or Tree; which *Clavius* well observes in his *Proem* to the first Book of *Euclid*, Chapter of the Excellency and Nobility of Mathematical Learning. And let any Man now say, if these Brawlings and Contentions caused by the Doctrines of this *Aristotle*, be not yet as much continued in our Schools, as they were of old.

Reason is Two-fold, *viz.* How, and Why: In how, you consider the causes, means and manner, of doing; In why, you consider the end for which Actions are done. The end or final Reason, is first considered before Man inquires into the causes, means and manner of Doing. The end for which Actions are done, is the usual Reason given of the common Actions of Men, which by habit are so familiar to them, as that they need not be Learned or Taught.

And as the ordinary Actions of Men, in attaining the end designed by such Actions, need not be Learned or Taught; so the Actions of Religion and Morality (except in commutative Justice) are so familiar, as need not be Learned or Taught, even to Children in their Childhood and Youth.

But it is otherwise in Art, where the means and manner of doing must either be Learned or Taught, or found out by Observation, Experience and Inquiry; but never comes to pass by Fate, Inspiration or Chance. And though God hath made all things for the use of Man, yet few things are useful to Man, but as they are prepared by humane Art and Industry: And though man stands in need of many things prepared by Art; yet in any one thing Art is Long, and Mans Life is Short. So that Art is wholly Problematical, or Practise, how things may be done.

That I may avoid so much as I can confusion of Terms; I make this difference between Observation and Experience in Art: Observation is a contemplation by the Senses; but not always, of the Nature and Disposition of sensible things, and this ought to be certain and necessary. Experience is a Tryal whether some probable conjecture upon some Act done will follow; which cannot be the object of Sense, which is of present Things and Actions; nor of the Memory, which is of Things and Actions past.

In Geometry and Arethmatick, Rational Propositions are Active and Speculative.

Active Propositions are termed Problems, wherein you propound

pound how some Figure may be done or described; but the demonstration is from Speculative fore-Knowledge; and in every Problem a Construction is necessary to be premised before the Demonstration.

Speculative Propositions are termed Theorems; wherein a Construction is not always necessary; and are Contemplative, and Demonstrate the Consequence which will follow upon some Act done, either by adding, compounding or dividing, *&c.* the definite Conceptions, or any of them.

All Rational Propositions in Religion, Morality and Prudence (excepting in commutative Justice, and measuring Prudent Actions,) and in these Propositions of the Nature of Man, wherein it agrees with that of other Creatures, are Speculative; and you may suppose some Act or Speech, and demonstrate the Consequence.

Rational Propositions are not onely of Intentions, Speech and Actions, which may and ought to be done; but of Intentions, Speech and Actions, which ought not to be done; whereby may be demonstrated the Vanity, Folly and Wickedness of such Intentions, Speech and Actions.

Every Rational Proposition consists of two parts, *viz.* some Act, Agent, Conception or Being, expressed by a certain name, and an Affirmation or Negation propounded, which is called the Question of the proposition, and is to be demonstrated. The Act, Agent, Conception or Being, may be assumed either under some Condition, or Supposition; which is expressed by *If*, or without any Condition. If you assume without any Condition, you propound by a Verb of the same Present time, as *Is*, *Hath* or *May*; if you assume under a Condition or Supposition, you propound by a Verb of the time to Come, *viz.. Shall* or *Will.*

As we said before, you need no Constructions which are necessary in Art; and in every Problem in Geometry & Numbers, these being supposed to be done in the Condition.

The parts of a Rational Proposition thus premised: you proceed to the demonstration, which is either Affirmative or Negative; never mixed as Commentators pretend to demonstrate the fourth Proposition of the first Book of *Euclid.*

An Affirmative Demonstration consists of four or more parts, *viz.* a major or greater Proposition, which is an Axiom; two or more mean or lesser Propositions, which are Petitions, Demonstrated Propositions, or the Condition or Supposition

position propounded in the Proposition; and the Conclusion, which is the Determining the Question of the Proposition: *Aristotle* therefore, who makes every Sillogism to consist but of three parts, never concludes, so, as to proceed in any Rational Knowledge.

A Negative Demonstration, is either immediate or by inferrence; immediate is, when any Speech contrary to the Question, without the aid of an Axiom, is shewed to be contrary to antecedent or fore-knowledge, propounded in some Principle, demonstrated Proposition, or the Condition or Supposition.

A Negative Demonstration by inference, is either when the Conclusion is Negative; or if Affirmative, when the Conclusion is repugnant to antecedent or fore-knowledge in any Principle, demonstrated Proposition, or the Condition; which you say, is absurd or impossible: and this Demonstration is not always of four Parts or Terms, but the major Proposition must be an Axiom, and one (if two) of the mean Propositions, must be the Speech or a Supposition, repugnant or contradictory to the Question of the Proposition.

Rational Propoſitions

TREATISE FIRST.

PART I.

Propoſition 1.

THE Soul of Man and all other Living Creatures, is no Part of their Body.

Contemplation, Is of the Soul of Man and other Living Creatures.

Queſtion, Whether the Soul be no Part of their Bodies? I ſay, it is not. If you affirm or ſuppoſe it to be, then by the 3d Petition, *The Soul is paſſive, and receives Life from the Soul*; which is abſurd by the 2d Petition, *That the Soul is Active, and gives Life to all the Parts of the Body.*

Conſequence.

From hence it is, in Death the Bodies of Men and other Creatures, and all the Parts of them, remain the ſame in number and quantity.

This is an Immediate Negative Demonſtration; ſo is the firſt Demonſtration of the 7th Propoſition of the firſt Book of *Euclid.*

Note,

As the Soul of Living Creatures hath no Part, nor is Part of the Body; ſo a Point in Quantity, and an Inſtant in Time, have no Parts, nor are Part of either Quantity or Time; But a Unit hath no Part, yet is Part of every Number.

Propoſition 2.

Man did not make himſelf a Living Creature.

Contempl. Is of Man.

Queſt. Whether he did not make himſelf a Living Creature? I ſay, he did not. If you ſuppoſe he did, than he muſt Act before he had a Power of doing, which is abſurd by the 1ſt Axiom.

Note,

Though this Demonſtration be Negative; yet the conſideration of it, may inſtruct Man, that he owes his Being, and all his preſent, and expectation of future Happineſs, to a Higher and Nobler Power, than can be found in himſelf.

Propoſition 3.

Man cannot infuſe Life into any thing, or make a Man or any other Living Creature.

Contempl. Is of Man.

Queſt. Whether he cannot make a Man, or any other Living Creature? I ſay, he cannot.

De-

Demonſtration.

3 *Ax.* For the Acts or Works of Nature, cannot be done by any Creature.

1 *Pet.* 1. But Man and other Living Creatures are ſo Naturally, or the infuſion of Life into them is a Work of Nature.

1 *Pet.* 1. And Man is a Creature.

Therefore he cannot make a Man or any other Living Creature, which was to be Demonſtrated.

Note 1.

All Learning, Reaſoning and Inſtruction, in Religion, Morality and Prudence, as well as in every Art and Science, will not onely be ſo much hindred, by how much more Men contend about Things and Actions, which are not in their Power; but ſuch enquiry ariſing from Pride, the Conſequences will be Vain, Fooliſh and Wicked.

And therefore theſe Negative Demonſtrations are principally intended to ſhew the Vanity, Folly and Wickedneſs, as well as loſs of time, by Contention upon pretence of Learning and Reaſoning, about Things and Actions which are not in humane Power; and as theſe Contentions have long raged in the World, upon pretence of Philoſophy, wherein the Doctrines of *Ariſtotle* have been received; ſo if you will have Patience, you may obſerve, whether all the Hereſies and Schiſms, which have ſo long plauged the Chriſtian World, have not ariſen from the Pride of Man, and in Contending about Things and Actions, which are above humane Power, upon pretence of Religion.

Note 2.

Though Man cannot infuſe Life or a Soul into Man, or any other Creature; yet when wretched Men by their Folly and Vices, have forfeited their Health, and expect to have it reſtored by Phyſitians and Mountebanks, who will be ſure to pick their Pockets, and give them hard Words for their Money; yet if you ask them a Reaſon why they give Cordials and Julips, (as they call them) in Sickneſs, they will tell you it is to raiſe the Animal and Vital Spirits: But never tell you the cauſe of the Diſtemper, nor do they underſtand by what means it came to paſs; which if they be ignorant of, it will be impoſſible ſo to prepare their Cordials, as to chaſtiſe the Diſtemper, but eaſie to kill the Patient, by raiſing the Animal or Living Creatures Spirits.

So Conjurers by as many hard Words, as Doctors and Mountebanks uſe, pretend to raiſe Spirits, yet impriſon them in a Circle: But what the Spirits are which Phyſitians and Mountebanks raiſe in Bodies, and Conjurers in Circles; or of what uſe they are I cannot tell. For my part, I underſtand no Spirit in Man but his Soul; and if I may injoy the Contemplations of my Soul, and perform the ends deſigned by thoſe Faculties it is endowed with, I am content that Doctors and Mountebanks ſhall have the benefit of the Spirits raiſed in Bodies, and Conjurers in Circles.

Propoſition 4.

If a Man ſhall Enquire how to make a Man or any other Living Creature, it will be in vain.

Agent is a Man.

Sup. That he ſhall Enquire how to make a Man, or any other Living Creature.

Queſt.

Queſt. Whether it will be in vain? I ſay, it will.

Demonſtration.

For if Things or Actions ſhall not be in the Power of the Agent, all inquiry how to do them will be in vain. 2 *Ax.*

But Man cannot make a Man, or any other Living Creature. 3 *Prop. Sup.*

And yet a Man does inquire how to make a Man, or ſome other Living Creature.

Therefore it is, and will be in vain, which was to be Demonſtrated.

Note,

St. *Paul* forewarns the Coloſſians, (who were a part of the Grecians) *Not to be ſpoyled by Philoſophy and vain Deceit.* And *Solomon* truely ſays, *Of making many* (I ſuppoſe vain) *Bookes there is no end.* And I dare ſay, more miſchief hath been done by vain Books, written in this laſt Age, than any good ever came, or will come by any of them. Nor do I underſtand, how they may be better prevented, then by ſhewing the Folly and Wickedneſs of them. *Coloſ.* 2. 8. *Eccl.* 12. 12

The Grecians ſet ſo high a value upon themſelves, that they eſteemed all the World beſides themſelves Barbarous; and their Manners are deſcribed by a Letter from *Cato Utican* when he was Pro-Conſul of *Aſia*, to his Son *Marcellus*. *Theſe Grecian Philoſophers*, he ſays, *ſpeak much and perform little; and account all the other World Barbarous, and onely themſelves Philoſophers; are ready friends to give Councel to others, but ſcorn to accept it from any; diſſemble Injuries, but never forgive them; conſtant in their Hatred, but changeable in Love and Friendſhip. So that from that day the Fathers of the Senate ſhall permit the Arts and Letters of* Greece *to enter* Rome, *from that day I hold the Commonwealth to be loſt. But thou ſhalt ſee theſe things ſoon vaniſh, and come to nought, for nothing is ſtable in this World, but what is founded upon Truth and Virtue. I ſee every day Phyſick-Philoſophers hold among themſelves great Diſputes about curing Infirmities, and applying Medicines to Sick people, and that what one Counſels, another Contradicts. So as Patients are cruelly tormented and often killed. And adviſes his Son, that ſix of theſe Phyſick-Philoſophers were coming to* Rome; *and to adviſe the Fathers of the Senate, not to permit them to Read or Teach Phyſick, nor Practiſe it in the Commonwealth, becauſe the Art of Medicine is ſo dangerous, and ſo hard to be underſtood, that many Learn, but few Know it.* With higheſt Reaſon therefore St. *Paul* forewarns the Converted Greek-Chriſtians, not to be ſpoiled by the Philoſophy and vain deceit of the other Grecians. And let any Man judge, if *Cato Utican* does not as lively deſcribe the manner of our Accademical Breeding, as if he had been converſant in it all his Life time. Guevara *Hiſtoriographer to* Charles *the* 5. *Emperour and King of* Spain, *Biſhop of* Mondonedo.

Propoſition 5.

Man cannot Generate or Form the Body of Man, or any other Living Creature, or any Part of their Bodies.

Contempl. Is of a Man.

Queſt. Whether he cannot Generate or Form the Body of Man or any other Living Creature, *&c.* I ſay, he cannot.

Demonſtration.

For the Acts or Works of Nature, cannot be done by any Creature. 3 *Ax.*

But Nature or the Soul does form the Body of Man and other Living Creatures, and all the Parts of them, by a Natural Power. 51 *Pr.*

1 Pet. And Man is a Creature.

Therefore he cannot form the Body of a Man, or any other Living Creature, &c. which was to be demonstrated.

Note,

Dr. *Harvey*, from the experience of Murdering Chickens, or the Production of Chickens, for fourteen days together, to observe the Principles and Natural Progression of the formation of their Parts, having been able as he says, to confute the Opinions of *Aristotle, Fabritius, Aldobrandus, Coiter, Riolan, Scaleger, Sennert, Avecen, Averroes*, and all the Colledge of Physitians, concerning the Generation of Living Creatures; yet when he comes himself to give an Opinion different from them all, as one amazed,

Ex. XLIX. he says, *The Omnipotent Creator in none of his Works does more manifestly reveal the presence of his Deity, than in the Structure and Fabrick of Living*

Ex. L. *Creatures.* And after says, *Wherefore* (in my Opinion) *he is the Right and Pious Philosopher, who deduceth the Generation of all things from the Eternal and Omnipotent Deity, upon whose pleasure the Universe dependeth. Nor do I think we ought to contend, by what Notion we call or adore this Agent (to whom all Names of Veneration are most due) whether that of God, or Nature making Nature, or the Soul of the World. For all men understand him to be that Beginning and End of all things which is Omnipotent and Everlasting, the Author and Creator of all things, preserving and perpetuating the Fluxibility of Mortal Creatures, by the several Vicissitudes of Generations; which being every where present, is no less assistant to the particular Operations of Natural things, then of the whole Universe; that so he may propagate all Living Creatures by his Deity, Providence, Art and Divine Understanding. Whereof some are Spontaneous Births, without any Univocal Efficient; some born by Associate Operations of Male and Female; some from one Sex onely; others by other intermediate Instruments, which Instruments are sometimes fewer, sometimes more, sometimes equivocal and by accident.*

These were noble Contemplations, and most worthy so great a Philosopher; yet if I had had the Honour of knowing the Doctor, I would have told him, that God in all his Works, either by Creation, Generation, or Grace, reserves the prerogative of Understanding how he does them, to himself, without Communicating the Honour of it, to any Creature. And therefore,

Proposition 6.

If a Man shall inquire how to Generate or Form the Body of a Man or any other Living Creature, or any Part of them, It will be in vain.

Agent is a Man.

Sup. That he shall inquire how to form the Body of a Man.

Quest. Whether it will be in vain? I say, it will.

Demonstration.

2 Ax. For if Things or Actions shall not be in the Power of the Agent, all endeavours how to do them will be in vain.

5 Prop. But Man cannot form the Body of Man or any other Living Creature or any part of them.

Sup. Yet a Man does inquire how to do it.

Therefore it will be in vain, which was to be demonstrated.

Con-

Conſequence.

In vain therefore is *Ariſtotles* and Dr. *Harveys* Generation of Living Creatures, how the Bodies of Living Creatures are formed; ſo are the Opinions of *Fabritius*, *Aldobrand*, *Coiter*, *Riolan*, *Scaleger*, *Avecen*, *Sennert*, *Averroes*, &c. and all the Colledge of Phyſitians concerning the Generation of Living Creatures. And whereas Dr. *Harvey*, *Sigbs and Complains that by the injury of the late Times, he loſt beſides his Goods many Obſervations (eſpecially of the Generation of Inſects) to the prejudice (he dares ſay it) of the Commonwealth of Learning.* For my part, if I had all thoſe Obſervations of the Generation of Inſects, I would not value them as one Straw. Ex. LXVIII.

Propoſition 7.

If a Man ſhall endeavour to find out how to Form the Body of a Man or any other Living Creature, it will be a Fooliſh Act.

Agent is a Man.

Sup. That he ſhall endeavour to find out how to Form the Body of a Man or any other Living Creature.

Queſt. Whether it will be a Fooliſh Act? I ſay, it will.

Demonſtration.

For if the inquiry how Things or Acts may be done, ſhall be in vain, all endeavours how to do them will be Fooliſh. 7 *Ax.*

But if a Man ſhall inquire how to Form the Body of Man, or any other Living Creature, &c. It will be in vain. 6 *Prop.*

Yet a Man does endeavour to find out how to Form the Body of a Man or ſome Living Creature. *Sup.*

Therefore it will be and is a Fooliſh Act, which was to be Demonſtrated.

Note,

In all Rational Actions the end is conſidered for which they ſhall be done, before Man inquires how to do, or by what means theſe Actions or Works may be done. And if the end be not preferrable or of more benefit than the means of doing, theſe will be fooliſh Actions. The end for which our firſt Parents eat the forbidden Fruit, was to be Wiſer than God had made them; and to be like God in Power as well as Knowledge; *And therefore God puniſhed them by driving them out of Paradice, and condemning Man to more Cares of Mind and Labour of Body, than any other Creature who Lives of its own accord; and Woman to bring forth her Off-ſpring with more Pain and Sorrow than any other Creature.* Gen. 3.14. Gen. 3.16.

The end for which our firſt Parents eat the forbidden Fruit was commendable, if it had not been done out of Pride and Diſobedience. But to what end do theſe Sage Philoſophers enquire into the How or Manner of Generation of Living Creatures; Hath the end been more beneficial than their loſs of time about it? Have they not ſpent all their time in vain, and fooliſhly, to no other end than to make Brawls, Contentions and Diſcords, which for the more honour of them, muſt be expreſſed by hard Words, which if they themſelves underſtand, no other Creature beſides does. And from the end we will conſider, by what wonderful Art this excellent end is brought to paſs.

Propoſition 8.

If a Man in Oviparous Generation ſhall deſtroy the end deſigned by the Production of the Chicken or Off-ſpring, to inquire how it is Generated, It will be a wicked Act.

Agent is a Man.

Sup. That in Oviparous Generation he ſhall deſtroy the end deſigned by the Production of the Off-ſpring.

Queſt. Whether it will be a wicked Act? I ſay, it will.

Demonſtration.

1 *Ax.* For every Act which ſhall be done againſt the good deſign of Nature, will be a wicked Act.

54 *Pet.* But Nature deſigned the Off-ſpring of Chickens and many other Oviparous Creatures, for a good end, *viz.* for Food for Man.

Sup. Yet a Man does deſtroy the Production of a Chicken, to inquire or pry into the Generation of it.

Therefore it is and will be a wicked Act, which was to be Demonſtrated.

Note,

Ex. *XLI.* Dr. *Harvey* comparing the Contagious, Epidemical, and Peſtilential Diſeaſes, which through the Air propagate Diſtempers in other Bodies, with the Generation of Living Creatures; cites this ſaying of *Seneca*, *How long time is required to ripen the Conception, for the Birth? With how great care and tenderneſs is it trained up, when it is an Infant? With what choiſe Food is it nouriſhed to a Youth? Yet how obnoxious is this Carcaſs at laſt? How loſt without any pains? An Age Builds Towers, which one Hour levels with the ground, with great caution things continue, but periſh at an eaſie rate.* But I ſay, the Pride, Folly and Wickedneſs of Man, deſtroys them at much eaſier rates. Art to improve things to Mans uſe, is long in any thing, and Mans Life is ſhort; yet Man ſtands in need of many things provided by Art. And if Art comes to paſs by Experience, as the Doctor affirms in his Preface to the Generation of Living Creatures; How comes it to paſs, that idle and wicked Boys, without any Experience, and not Learned or Taught by any, attain the Art of robbing Hens-Neſts, and deſtroying their Eggs, with as much Art as *Ariſtotle*, the Doctor, or any Philoſopher of them all, and to as little purpoſe.

Here Contemplate the Wiſdom, Goodneſs and Providence of Nature, in the end or deſign of her Works, wherein ſhe is imitable by Man, though not in her Works. By more perfect Oviparous Creatures, whether Fiſh or Fowl, ſhe deſigns a two-fold end, one for Food for Man, the other for propagating their Kinds, yet for the ſame end, in Generations to come. Theſe Eggs or Conceptions of Oviparous Creatures, are as well as their Parents deſigned for Food for Man, as for continuing their Kinds. But when any appearance of Life appears in the Conception, then the whole maſs of the Egg becomes corrupted, and is fit for no other end or uſe, but for nouriſhment of the Off-ſpring. 'Tis a very wiſe as well as wonderful Conqueſt therefore, to deſtroy the good deſign of Nature, in the Production of Oviparous Creatures, whenas the other parts in the Conception, are good for nothing elſe but for nouriſhment of the Off-ſpring.

Corollary.

By the ſame Reaſon, I ſay, If a Man ſhall deſtroy the Parent of uſeful Vivi-

Viviparous Creatures, the inquiry into the Generation of its Off-ſpring, It will be a wicked Act.

For Nature generally deſigned Viviparous Creatures, for a good end, *viz.* for Food for Man. 55 *Pet.*

Yet a Man does deſtroy Viviparous Creatures, to inquire into the Generation of their Off-ſpring. *Sup.*

Note 1.

When two or more Propoſitions ſo ſucceed one the other, as the ſame Axiom determines the Queſtion of both or more Propoſitions, theſe I take to be Corollaries, as relating to the former Axiom; and in the Demonſtration premiſe the mean Propoſitions onely. And a Corollary hath the ſame authority as any demonſtrated Propoſition or Petition. But if you will, you may thus demonſtrate this Corollary.

Every Act which ſhall be done againſt the good deſign of Nature, will be a wicked Act. 11 *Ax.*

But Nature generally deſigned Viviparous Creatures for a good end, *viz.* for Food for Man. 55 *Pet.*

Yet a Man deſtroys Viviparous Creatures, to inquire into the Generation of their Off-ſpring. *Sup.*

Therefore it is and will be a wicked Act; which was to be demonſtrated.

Note 2.

The Wiſdom and Providence of Nature, in the preſervation of the Kinds of Living Creatures by Generation, for Food and other uſes for Man; for theſe Viviparous and Oviparous Creatures generally are made for Food for Man, yet in thoſe ſeaſons when the Male rages in his luſt, and the Female is big with young, Nature then deſigning their Off-ſpring by Generation, for the uſe of Man, makes their Bodies of little or no uſe for Food; and therefore God *Forbids killing the Parents of Viviparous Creatures, and their young at the ſame time*, and ſo does forbid *the killing Fowl and her young, at the ſame time.* Levit. 22. 28. Deut. 22. 6.

Propoſition 9.

If a Man ſhall deſtroy the Parent and Off-ſpring of any uſeful Viviparous Creature, to pry or inqure in the Generation of the Off-ſpring, it will be a more wicked Act, than to deſtroy the Off-ſpring of uſeful Oviparous Creatures.

Agent is a Man.

Sup. That he ſhall deſtroy the Parent and Off-ſpring of a uſeful Viviparous Creature, to inquire into the Generation of the Off-ſpring.

Queſt. Whether it will be a more wicked Act, than to deſtroy the Off-ſpring of any Oviparous Creature, to inquire into the Generation of it? I ſay, it will.

Demonſtration.

For every Act will be ſo much more, by how much ſhall be added to it. 13 *Ax.*

But if a Man ſhall in Oviparous Generation, deſtroy the Off-ſpring of uſeful Creatures, to inquire into the Generation of it, It will be a wicked Act. *Prop.* 8.

And to deſtroy the Parent in Viviparous Generation, to inquire into the Generation of the Off-ſpring, is a wicked Act. *Corol. Prop.* 8.

Sup. Yet a Man dares deſtroy the Parent and Off-ſpring of a uſeful Viviparous Creature, to inquire into the Generation of the Off-ſpring.

Therefore it is and will be a more wicked Act, than to deſtroy the Off-ſpring of uſeful Oviparous Creatures; which was to be demonſtrated.

Conſequence.

From hence it is, that Dr. *Harvey*'s murdering ſo many innocent Does, in *Hampton*-Park, to peak and pry into their privy parts, to ſee what ſucceeded in the Generation of their young in *October*, what in *November*, and what in *December*, were all multiplyed wicked Actions in all the gradations of them, as well as vain and fooliſh, *viz.* to no purpoſe, but to deſtroy. I do not believe the Doctor would have been content his Wife, if he loved her, or any other friend of his ſhould have been ſo ſerved, when they were with Child; yet it may be a Queſtion, Whether theſe ſage Philoſophers, out of Natural affection, or for fear of the Law, ſpare their own Wives and Children in ſuch wiſe Inquiry?

L. 6. Cap. 34. If it were ſo immodeſt an Impiety, as *Suetonius* and *Juvenal* in his 6th Satyr chargeth *Nero* with in Diſſecting his Mother, to ſee the place wherein he was Conceived; I do not underſtand, why it is a leſs immodeſt Impiety in Phyſitians and Mountebanks to Diſſect the Privy parts of other Women, and to as little purpoſe as *Nero*'s Diſſecting the Womb of his Mother: Can they after their Diſſection or Mangling of them, put them together better than they were before? Or make a Womb in any other thing, wherein Nature hath not made it? Or are they aſhamed of the place of their firſt Original, and therefore wreak their anger upon it, by thus Mangling of it? Why, I tell them, an infinite wiſer Being than they all put together, judged it good enough for them; and I ſay, it was too good for them, ſince they uſe it ſo ill. And for my part, I wiſh, if any of theſe Philoſophers hereafter ſhall play the fool ſo again (to ſay no worſe) that if they cannot give a Reaſon for mangling the Privy parts of Women, they ſhould be injoyned to eat them when they have done.

Propoſition 10.

If a Man ſhall endeavour to obſerve or find out the Circulation or Motion of the Blood, by Anatomizing dead Bodies, It will be in vain.

Agent is a Man.

Sup. That he ſhall endeavour to obſerve or find out the Motion of the Blood by Anatomizing dead Bodies.

Queſt. Whether it will be in vain? I ſay, it will.

Demonſtration.

8 Ax. For if the Actions or Motions in things ſhall ceaſe, all obſervation of them will be in vain.

48 Pet. But in Death all Motions or Circulations of the Blood ceaſe.

Sup. Yet a Man does Anatomiſe dead Bodies, to obſerve or find out the Motion or Circulation of the Blood.

Therefore it will be in vain, which was to be Demonſtrated.

Note,

So will all obſervation after Death be in vain, of the Motions of all the Inward parts of the Bodies of Living Creatures, and of the almoſt-infinite Motions in them; which when Living, could not be perceived by any Mortal Eye. How vain then is all *Galen's* uſe of Parts gueſſed at by Anatomy?

where-

wherein he endues the Liver with a Power of making Blood; whereas by the authority of Dr. *Harvey*, *The Blood is first Generated and its Vessels, before any other part of the Body be formed*; *And that the Blood is perfectly concocted before any Tract or Foundation of the Liver appears.* And so far is the Liver from making the Blood, that the substance of it is not onely Generated, but continually renewed and repaired for its expence by the Blood, as well as any other part of the Body. Ex. LI. Ex. XIX.

Nor is the Conjecture of the *Aristotelians less vain, that the Heart is the first Living and last Dying.* Dr. *Harvey* observes in his 5th Inspection of the Generation of Oviparous Creatures, *That the three Bullæ of the Head do plainly appear, and the Coats of the Eyes are distinct, and Leggs and Wings bud forth before the Parenchyma, or Substance of the Heart grows to the Vesicula Pulsans, or Artery*; *and after the Liver and Lungs are discovered.* Nor is it possible the Heart should be after encreased and continually supplyed in its expncee, by any other powor than that of the Blood, which first formed it, and so Dr. *Harvey* says: And it is as impossible, if nourishment be a converting of one Body into another, that the Heart should nourish all the other parts of the Body. Ex. XIX. LVI. Ex. LI.

If therefore neither the Circulations of the Blood, nor the Motions in any of the parts of Living Bodies, can be observed or found out by Anatomizing dead Bodies, and that the Ancients have been so deceived by it: I should be glad to be informed to what purpose it is still continued? I mean by Physicians, Montebanks and Philosophers, not Surgeons.

But though Anatomy be of no use to find out or observe the Circulation of the Blood, or the Inward Motions of the other parts, in dead Bodies; yet Physicians tell of wondrous discoveries lately made of Milk-veins, and Hair-veins, in Bodies by Anatomy, by the help of a Microscope; and that in some Bodies they have taken out of the Bladder a Stone as big as a Hens Egg, strangly rugged; and that in other Bodies they have found in stead of the Juices in the Gall, Stones wondrous smooth, and of strange and different colours; In others, Lungs wasted, and the Liver rotted; and the substance of the Heart almost all fatt; with many other rare things. And indeed here the Physician tells of more than any Butcher, who trades in killing sound Cattle, ever knew: But to what purpose is this rare discovery of these Physicians? Can they by it make the Milk or Hair-veins? Or dissolve the Stone in the Kidneys or Bladder? Or renew the decayed Lungs or rotten Liver? And I do not doubt if a Butcher had nothing else to do, but to Anatomise the Carrion Carcasses of Surfeited Dogs, Rotten Sheep, Cats, Cows and Horses, he would be as good a Philosopher as ever a Physician of them all, and tell as many strange Tales of his Inventions, as any of them.

If you ask a Butcher why he cuts the Bodies of Cattle into many and different parts, he will give you a plain Answer, *viz.* to feed his Customers, and to make his prizes accordingly: But I do not expect like Reason from our Philosopher-Physicians, for mangling the dead Bodies of Men; and therefore if I had the disposal of Bodies, I would enjoyn all Anatomizers of them, if they could give no Reason for it, to eat all the parts they should mangle.

* *Juvenal* and † *Tacitus* in the Life of *Tiberius Cæsar*, recite, That after *Sejanus*, *Tiberius* his great Favourite, was put to death by a Decree of the Senate, the rage of the common People was such, as they mangled the Body into so many pieces, that scarce any part of it could be found; and * *6 Satyr.* † *An. L. 5. Cap. 2.*

soon

ſoon after relented, and were ſorry for what they had done. I believe Phyſicians are in ſomewhat a better temper when they Anatomiſe the Bodies of Men, and the Privy parts of Women, yet I never heard any of them were ſorry or aſhamed for what they had done.

Caution.

Though I am offended at Phyſicians Anatomizing Bodies, yet in Surgery and Bone-ſetting, Anatomy is of uſe, *viz.* to obſerve how the Veſſels of Blood, and the Sinews and Membranes in Bodies lye, leſt by cutting the greater Veſſels of Blood, too great an Effuſion (but then you muſt grant the Circulation of the Blood) may flow; and to avoid the cutting of a Sinew or Membrane, which being Inſtruments of Motion, may cauſe a Lameneſs in the part. But why theſe obſervations may not be in other Bodies as well as Mans, I cannot tell. But I am ſure, they may be better obſerved in other Bodies, than the Generation of all Living Creatures can be obſerved by breaking Hens-Eggs, and Diſſecting the Privy parts of Does and Hinds. Theſe Wicked, Barbarous and Baudy Practices of Phyſicians and Mountebanks, puts me now upon inquiry, whether Phyſick, as now Practiſed, be either Art or Science, even by the Principles of *Ariſtotle* and Dr. *Harvey*, ſo as any Learning or Reaſoning can be obſerved in it; yet I will ſtay a little, and ſo well as I can, ſhew from what Original Phyſick became in ſuch Eſteem and Practice in the World.

It was paſt old *Saturns* Age, where *Juvenal* in his ſixth Satyr found no place for a Phyſician. The firſt Phyſician among the Greeks (and out of *Greece* none was then heard of) was the Philoſopher *Apollo* and his Son *Æſculapius*; but if any Man can finde a more early one, I am content: But upon their death, *Guevara* ſays, *The Art of Phyſick ceaſed in* Greece *for* 400 *years.* But then he ſays, that *Pliny* ſays, *A Woman did flouriſh, and did ſuch wondrous Cures, as were incredible; and that in thoſe days a Woman in* Achaia *Practiſed by Charms and Words, without applying any Medicine, but was Condemned by the Senate of* Athens *to be Stoned to Death. And that in thoſe days the Greeks held for a Cuſtom, that when any Man had made experience of any Medicine, he was bound to Write it in a Table, and hang it up in the Temple of* Diana.

To Dr. Melgar.

Afterwards *Ipocras* tranſlated the Tables of Medicines which were in the Temple of *Diana*, and was the firſt who put the Practice of Phyſick in Order and Method. (which ſure is ſince loſt) But his Diſciples Practiſed Phyſick with ſo ill ſucceſs, that by a Decree of the Senate of *Athens*, they were not onely Prohibited, but Baniſhed *Greece.*

About 160 years after, *Criſippus* ſet up the Practice of Phyſick, and was as famous with the *Argives*, as *Ipocras* was with the *Athenians*: but he did ſo impugne the Doctrines of *Ipocras*, that after his death there aroſe ſuch contentions between the Diſciples of *Ipocras* and *Criſippus*, that it was determined, neither the Opinion of the one or the other ſhould be followed; and then the *Grecians* remained quiet for about 100 years without a Phyſician; when *Ariſtratus*, a Couſin of *Ariſtotles*, ſet up, and put the Practice of Phyſick to ſale, which before was gratis; and his followers became ſo rapacious in Fees, that by a Decree of the Senate of *Athens*, they were commanded not to preſume to Teach Phyſick, much leſs to Practice it.

About 100 years after *Euperius* ſet up to Practice in *Tinacria*; but upon the contentions between him and other pretenders of Phyſick, about the Cure of King *Criſippus*, it was Decreed, that Phyſick ſhould be onely Practiſed

Practised by simple, not compounded Medicines. However, as Mens Vices prevailed, so did the Practice of Physick, even among the *Romans*, against the Advice *Cato Utican* gave; yet *Titus Vespasian* (the Darling of the World, and Delight of Mankind) Banished Orators and Physicians; Orators because they were Enemies to the Customs; Physicians because they were Enemies to Health. And for that he had found by Experience, that in Cities wherein Physicians are resident, were always abundance of Vices; yet *Adrian* recalled them, but complained a Rout of them had killed him.

But it may be objected, though Physicians were so often Banished *Greece* by publick Decree; and though *Cato Utican* and *Titus* were excellent Men; yet might be Ignorant in the Art or Science of Physick, and therefore might err in their Judgments through Ignorance.

We will therefore now consider, whether Physick, as now Practised, be either Art or Science, or there can be any Learning or Reasoning in it. But if generally, all at least accidental Distempers, be principally seated in the Blood; and that it be as Dr. *Harvey* says, he was the first that found out the Circulation of the Blood; then I suppose, it will be agreed, before the Doctor found out the Circulation of the Blood, all Practice in Physick was Mountebankery, and no difference between Physician and Mountebank, but in their Fees. We will now consider, Physick as now Practised, whether it be a Science. Ex. LII.

Aristotle says, *The Principles of Science, are not Science, and that Reason is of Science and Conclusions.* If therefore the Practice of Physick be a Science, I would fain know where the Principles are to be found, and by what Method of Reason Physicians arrived at their Practice or Conclusion. If the Principles be certain and necessary, then if they do not err in their Practice, so would be their Cures; but how unsuccessful their Practice is, that no Man escapes their hands, without new torments and vexations, and rarely any Man but by death, is so commonly known as needs no instances. However, if I be in the wrong, it will be in the power of a Physician to put all things into rights, and premise his Principles, and give a Reason of his Practice. *Ana. Post. L. 2. C. 19. and Ana. Post. L. 1. C. 1.*

But I suppose, Physicians will affirm, that the Practice of Physick is an Art of Curing, and is not purely Speculative, but found out by Experience. But then I will tell the Physician, a Cobler is as much a Philosopher as over a Physician of them all, and Practices with more safety: when Patients are at so nice a crisis, and Life with great difficulty continues; is it then a time of day to try Experiments upon them? I would sooner attribute Experiment to the Apothecary, then Doctor, who knows better the nature of his Drugs, and their composition than the Doctor, and also better observes the working of them upon the Patient.

If Physick be an Art, then it is purely Practical, and is long in Learning, by a constant habit; and therefore youth are commonly bound Prentices to learn Art, seven or more years; which in *England* I never heard any Physician ever was: and how then they came inspired by this Art, I cannot tell. I am sure no Art in any thing else ever came to pass by Fate, Inspiration, or Chance, but by Education, Experience, and Observation.

And if it be true, which *Aristotle* says, *That Memory is made by Sense, and Experience by often remembring the same thing*: and to which Dr. *Harvey*, in his Preface to the Generation of Living Creatures subscribes; I would *Ana. Post. L. 2. last Chap.*

fain know by which of the Senſes a Phyſician perceives the inward temper of the conſtitution of Bodies, which in all circumſtances are not alike but of different tempers in differing Bodies; and in no one the ſame, remains the ſame it was, but altering from what it is, to what it ſhall be, by ſuch alteration. And if by Senſe a Phyſician knows this? How comes it to paſs no Man elſe can do it.

And as in Conſtitutions, ſo in Habits, which cauſe Diſtempers; Does any Phyſician by any of his Senſes know how much Wine, Brandy, or any other ſtrong compounded Liquor the Patient drunk to put himſelf into a Feaver? What were thoſe Wines? Whether pure or Sophiſticated? If French Wine, by how much Stumb, or what elſe? If Spaniſh and Sophiſticated? How much Hogs-greaſe, Hony, or Moloſſus, Sugers, was it compounded with? What were the Compoſitions of other compounded Liquors? And how were they brewed? And if he errs in any of theſe, or any other infinite accidents, or in the conſtitution of the Patient, he will eaſily kill him, not cure him; if he hath not ſtrength of Nature to conquer the Diſtemper, and all the Doctors ſhall adde to it.

But ſuppoſe the Doctor were inſpired againſt the Logick of *Ariſtotle*, & Dr. *Harvey*, to underſtand all the cauſes of Diſtempers, and alſo the temper of the Conſtitution of his Patient to a Gnats toe; and could by his inſpired knowledge, know by what Drugs to cure him? Yet is the Patient in no manner of ſafety; For then he in Hieroghyphicks, underſtood by none but the Apothecary and himſelf, directs what then comes next in his head; and as the Patient is able to pay, ſuch is the Bill; if rich, then Pearl, Corral, Bezar, Ambergreeſe, Syrup of Citern; but how can he or the Patient tell if the Apothecaries Drugs be ſuch as the Doctor expects; if they be not, though the Doctors directions be good, the Medicine may kill the Patient; which whether it do's or not, and if for Pearl the Apothecary puts in Oyſter-ſhells; if for Corral, Crabbs-eyes; for Ambergreeſe, Musk; for Syrup of Citern, Juice of Lemmons, &c. Yet if the Patient pays well, the Doctor Apothecary, ſhall never quarrel about the Compoſitions. Yet this happineſs attends the Practice of Phyſick; if the ſtrength of Nature prevails againſt the Diſtemper, and all the tamperings of the Phyſician, the Patient lives to proclaim the Phyſicians skill; but the Multitudes they ſend into another World, tell no Tales.

Ay, but the Jeſuits Powder now does wonders, both in Feavers and Agues, which before never the skill of Phyſick could arrive to. 'Tis true, but what is this to the Philoſophy of *Ariſtotle*, or the Learning of our Phyſick-Profeſſors? Did they find it out? Is it not to be aſcribed to the ignorant Indians of *Peru*? From whom the Jeſuits acquired the knowledge of its excellent vertues; and now ſet up a Trade for it in all parts of the World? Why muſt our Phyſicians now preſcribe it? How can they tell whether the Bark be right or not?

And though the Blood be the firſt living and the laſt dying part of Bodies, and by its perpetual Circulation and Motion continues Life in Bo-
Ex. LXXI. dies, and is always repairing the expence of Bodies: And as Dr. *Harvey* obſerves, *The heat of the Blood is an Animal heat, in as much as it is guided in its operations by the Soul; and alſo a Cæleſtial heat, as being ſubſervient to Heaven; And laſtly, a Divine heat, in that it is the inſtrument of God Almighty.* Yet how often do theſe Phyſicians and Mountebanks ſtab Veins and Arteries; they might take a nearer way, by cutting their Patients Throats, and ſave their multiplied remaining torturing of them, and the expence

expence of Fees and Apothecaries Bills. For my part, I never saw but two men dye, one was Hanged; the other was called General *Knipe*, who by direction of Dr. *Micclethwait* (afterward for his great Learning Knighted) was let Blood; he fainted in Bleeding, and upon the stopping of his Blood, dyed outright.

Proposition 11.

Man cannot endue the Arterial Blood of Sensitive Creatures with a power of concocting or preparing the Juices of Food in the Stomack, nor of drawing them from thence into its own Body, and converting them into it; nor the Outward Blood with a power of nourishing or converting its own Body into all the other different parts of their Bodies.

Contempl. Is of Man.

Quest. Whether he cannot endue the Arterial Blood of sensitive Creatures, *&c.* I say, he cannot.

Demonstration.

For the Works of Nature cannot be done by any Creature. 3 *Ax.*

But the Arterial Blood in sensitive Creatures does concoct and prepare the Juices of Food in the Stomack by a natural power, or working; * and so it does draw them from thence into its own Body, † and convert them into its own Body; ‖ so does the Outward Blood nourish all the different parts of the Body. 33 *Pet.* * 34 *Pet.* † 35 *Pet.* ‖ 37 *Pet.*

And Man is a Creature. 1 *Pet.* 1.

Therefore he cannot endue the Arterial Blood of sensitive Creatures, *&c.* which was to be demonstrated.

Note,

That the power of Nature in nourishing and preserving the Bodies of the different kinds of sensitive Creatures after she hath formed them, may more particularly appear; we will consider Nature in the plastick or forming power, contained in the imbred, or first-bred Water, which hath all the future Bodies of sensitive Creatures, & all the parts of them in Power, but none in Act. And no Man herein but as much admires the Wisdom of Nature in preserving the kinds of all sensitive as well as insensitive Creatures, as her power in forming them.

And as the Plastick or Forming power in the first imbred water, is so wonderful in the production and preserving the kinds of sensitive Creatures; so it is not less in the seeds of Trees and Plants, whereby the kinds of all of them are preserved in future Generations, whenas they dye or are destroyed.

And thô the Plastick or forming power in the first-bred Water in sensitive Creatures, transforms it into living or beating Blood; yet this Blood still retains the power of preserving the kind, as well as forming the Body of the future Off-spring; and after the parts are all formed, the Blood in nourishing Bodies still retains the power of preserving their kinds, which it received from the first imbred Water.

Consequence.

From whence it follows, that if a Man, a Lyon, a Dog, a Raven, *&c.* shall eat of the same Food, yet the Blood in these different Creatures shall nourish

nouriſh their Bodies according to their differing Kinds by the temper it received from the firſt-bred Water, and ſo continue their different kinds after they are formed.

Corallary.

By the ſame Reaſon, I ſay, Man cannot endue the ſap of Trees and Plants with a power of concocting and preparing the water, or moiſture in the earth, or to draw it into their Bodies through their Roots, or to convert this water into the ſubſtance of their Bodies.

Note on 19 Pet. For Trees and Plants naturally repair their Bodies, by prepared or diſpoſed water ſucked into their Roots, and from thence ſent and converted into the ſubſtance of their Bodies.

1 Pet. And Man is a Creature.

Note,

As the Bodies of different kinds of ſenſitive Creatures may be nouriſhed by the ſame food; ſo in inſenſitive Creatures, you may obſerve in the ſame Field many varieties of different kinds of Trees and Plants, all nouriſhed by the common water, or moiſture in that Field: and herein the admirable power of Nature is not leſs obſervable, then in the preſervation of the kinds of ſenſitive Creatures.

Ex. XLI. Dr. *Harvey* obſerves, *A vaſt Tree ariſes from a little Acorn; nay, from the ſmalleſt bud or point of an Acorn; Yet how does the aged Oak diſplay its ſpreading arms? How lofty a creſt does it exalt to Heaven? And how deep a root does it ſend down to fathom the Earth? It is indeed* (ſays Pliny) *an incomprehenſible miracle, that ſuch a lofty ſubſtance which deſies the Ax; that preſſes undaunted at the hugeſt weights; That maſts are patient of largeſt ſails, and rams unbattered by the ſhock of Towers and Bullworks, ſhould proceed from ſo mean Principles! But this is Natures power, this her ability.*

Lib. 17. C. 10.

Propoſition 12.

If a Man ſhall endeavour to endue the Arterial Blood of ſenſitive Creatures with a power of concocting or preparing the Juices of Food in their Stomack, or of drawing them from thence, and converting them into its own Body; or the Outward Blood with a power of nouriſhing all the different parts of the Body, It will be in vain.

Agent is a Man.

Sup. That he ſhall endeavour to endue the Arterial Blood of ſenſitive Creatures, *&c.*

Queſt. Whether it will be in vain? I ſay, it will.

Demonſtration.

2 Ax. For if Things or Actions ſhall not be in the power of the Agent, all endeavours how to do them will be in vain.

11 Prop. But Man cannot endue the Arterial Blood in ſenſitive Creatures with a power of concocting or preparing the Juices of food in the Stomack, *&c.*

Sup. Yet a Man does endeavour to do it.

Therefore it is and will be in vain; which muſt be demonſtrated.

Note,

By the 38 *Petition,* the Arterial Blood is the firſt living Body in all ſenſitive Creatures; And 30 *Petition,* the Arterial Blood is continually anni-

nimated or enlivened by breathing Air, as it is affected by vapours or particles sent out of the Earth, Water and other Bodies; and being thus animated, it joys and leaps at the receiving new Life and Motion, which ceases when it has sent it into the Veins, though the passage is through a passage so short, as scarce discernable, and the Venal Blood is so much less lively; that I have often heard Physicians and Apothecaries say, One ounce of Blood let out of an Artery, is more considerable than five out of a Vein.

Yet I remember, about eighteen years since, a great bustle was among Physicians and Philosophers, to repair Life by transfusion of Blood, out of one Body into another: and tortured many Dogs and Cats to do it, and it was said they killed one *Cogy* (who I knew, and was called Doctor too) with their Experiments.

But, suppose Nature should forsake her Wisdom in Generating sensitive Creatures, and after renew and repair their Bodies, and continue their different Kinds by the wonderful power of the Bloods in their several Offices, to gratifie such Barbarous Practices; and that the Bloods designed for nourishment and preserving the Kinds of other Creatures, should have the effects of the Natural Blood in Man; yet by the 18 *Petition*, the Soul of sensitive Creatures does continually send out the substance or the finest part of their Bodies through the Poars of the Skin. And by the 19 *Petition* the Bodies of sensitive Creatures, are always repairing by the Juices of Food received into their Stomack; and so as admitting the transfusion of Blood out of one Body into another, should renew Life in this other; you must be daily killing one Body, and mangling and wounding another.

Proposition 13.

Man cannot endue the Arterial Blood of sensitive Creatures, or any of them, with a power of sending the grosser parts of Food received into the Stomack, and which cannot be converted into the nourishment of their Bodies, out of the Body by Stool and Urine.

Comtempl. Is of a Man.

Quest. Whether he cannot endue the Arterial Blood of sensitive Creatures with a power, *&c.* I say, he cannot.

Demonstration.

For the Acts or Works of Nature cannot be done by any Creature. 3 *Ax.*

But the Arterial Blood sends the grosser part of Food received into the Stomack by Stool, by a Natural power. 41 *Pet.*

And Man is a Creature. 1 *Pet.*

Therefore he cannot endue the Arterial Blood with this power, *&c.* which was to be demonstrated.

Note,

A difference between the powers of the Arterial Blood, in sensitive Creatures; and the powers of the Sap in Trees and Plants. For the Sap in Trees and Plants never through off any part of the nourishment it receives by the Roots, either by Urine or Stool; for the Water sucked into their Bodies throw their Roots, is so finely prepared or digested, as the whole substance is distributed and converted into the nourishment of the Tree or Plant. But it is otherways in the Food received into the Stomack of sensitive Creatures; for it is impossible the grosser parts of Food in the

Stomack ſhould be diſtributed from thence into the outward parts of their Bodies, and therefore if the Arterial Blood did not throw them out of their Bodies by Urine and Stool, their Guts and Uriters could not contain the Excrements which would ariſe by ſucceeding Food.

Corollary.

By the ſame Reaſon, I ſay, Man cannot endue the Outward Blood in its Motion or Circulation with a power of ſucking into its own Body the fineſt or ſubtileſt parts of all the other parts of the Bodies of ſenſitive Creatures, and nouriſhing them with other matter.

37 *Pet.* For the Outward Blood in its Circulation or Motion, does continually ſuck into its own Body the fineſt parts of the other parts of the Bodies of ſenſitive Creatures, and nouriſhes them with other matter, by a Natural power.

1 *Pet.* And Man is a Creature.

Note,

The power of this Blood in continual ſending out the fineſt parts of the Bodies of ſenſitive Creatures through the Poars of the Skin, and repairing them by other matter, is not leſs wonderful, than the Plaſtick power in the firſt-bred water in the Generation or forming the Bodies of ſenſitive Creatures, in all the parts of them, which may better appear, if we conſider,

That when this Plaſtick power hath converted the firſt-bred water into joyful and leaping Blood; it from thence forms all the parts of the Bodies of ſenſitive Creatures. In this formation the Bones and Sinews are like Jelly, and when all the parts are formed, the Bones become rather Cruſhes then Bones; and the Sinews and other parts of their Bodies ſo watry, that the Joynts of Infants, and many other Creatures cannot ſupport the weight of their Bodies, and the Sinews and Membranes ſo laſh or watry, that they cannot move their Bodies in any part but their Mouthes.

But the Outward Blood then continually ſending the fineſt and watry parts of theſe Bodies through the Poars of their Skins, renews them by other matter, into more firm and ſubſtantial parts; ſo as the Bones become harder, and the Sinews and Membranes, and all the Fleſhy parts of the Body more firm and leſs watry; and thereby as ſenſitive Creatures are in their Natural Conſtitutions, ſome move their Bodies ſooner, ſome later, but Man of all Creatures continues in this feeble ſtate longeſt.

When this Blood hath intituled the parts of the Bodies of ſenſitive Creatures to Action and Motion, as it more increaſes, confirms and makes the parts more ſubſtantial; ſo they increaſe into more ſtrength and activity, until they arrive at their moſt perfect ſtate. Man herein proceeds from Infancy to Childhood; from Childhood to Youth; from Youth to Striplinſhip; and thence to Manhood.

During the tender years of ſenſitive Creatures, Nature by the Outward Blood brings more nouriſhment than is neceſſary to repair their preſent ſtate, deſigning the reſidue for to enlarge the parts of their Bodies, till they arrive at their moſt perfect ſtate; and then Nature Intitles them to a power of propagating their Kinds into other Bodies; and what ſhe before deſigned for growth or enlarging their parts, ſhe now converts that into Geniture: But ſtill continues in nouriſhing the parts of their Bodies, to make them more hard and dry then before, until they are not capable of being renewed by nouriſhment, from whence old Age and Death Naturally ſucceeds, even in the moſt healthful, temperate, and longeſt lived Creatures.

Note 2.

Note 2.

The Outward Blood in nouriſhing the Bodies of different ſenſitive Creatures, and continuing them in their Kinds, reſembles the power of Sap in Trees and Plants, which continually ſends out the fineſt parts of the ſubſtance of their Bodies, and repairs them by other matter; whereby it not onely encreaſes them, but renews them more firm and ſubſtantial than they were before; ſo that though the ſubſtance of Trees and Plants in their firſt growth are watery and looſe, yet by continuance they grow greater and more ſubſtantial, until they arrive at their more perfect ſtate, when they bring forth fruit as well for preſervation of their Kinds, as for the uſe of man. But though Trees long continue in this ſtate; yet the Bodies of Plants generally grow hard and dye, when this office is performed by them.

Corollary 2.

By the ſame Reaſon, I ſay, Man cannot endue Man, or any other Creature or Thing with Senſation, *viz.* a power of Seeing, Hearing, Taſting, Feeling or Smelling.

For Man and all other ſenſitive Creatures, are ſo naturally. 10 *Pet.*

And Man is a Creature. 1 *Pet.*

Conſequence.

Therefore, if Creatures be naturally denied Senſation, as Trees and Plants, it is not in the power of Man or any other Creature, to make them See, Hear, Smell, Taſt or Feel. Or if by any natural deffect, any ſenſitive Creature be denied any of theſe powers, it is not in the power of Man or any Creature to endue it with Senſation, in any of the Senſes, wherein it is denied by Nature.

Propoſition 13.

If a Man ſhall endeavour to endue Man, or any other Creature or Thing with Senſation, It will be in vain.

Agent is a Man.

Sup. That he ſhall endeavour to endue Man, *&c.* with Senſation.

Queſt. Whether it will be in vain? I ſay, it will.

Demonſtration.

For if Things or Actions ſhall not be in the power of the Agent, all endeavours to do them will be in vain. 2 *Ax.*

But Man cannot endue Man or any other Creature or Thing with Senſation. 2 *Corol.* 13 *Prop.*

Yet Man does endeavour it. *Sup.*

Therefore it is, and will be in vain; which was to be Demonſtrated.

Note,

I do not underſtand why *Ariſtotle*, Dr. *Harvey* and the Colledge of Phyſicians were not ſo vain (to ſay no worſe) as to cut out the Eyes, and deſtroy the Organs of Hearing in ſenſitive Creatures, to inquire or find out how they did Hear and See, *&c.* for they may better do this, and to as little purpoſe, than deſtroy the Parent and Off-ſpring, to inquire into the Generation of the parts of it; or torture and mangle the Bodies of Dogs and Cats, to tranſfuſe their Bloods into other Creatures.

Propo-

Propoſition 14.

Man cannot endue Man or any ſenſitive Creature, with a power of moving their Bodies, or any part of them.

Contempl. Is of Man.

Queſt. Whether he cannot endue Man or any other ſenſitive Creature, with a power of moving their Bodies, or any part of them? I ſay, he cannot.

Demonſtration.

3 *Ax.* For the Works of Nature cannot be done by any Creature.

14 *Pet.* But Man and all ſenſitive Creatures, are naturally endued with a power of moving their Bodies, and all the parts of them.

1 *Pet.* And Man is a Creature.

Therefore he cannot endue Man or any other Creature, with a power of moving their Bodies, or any part of them; which was to be Demonſtrated.

Note,

I put this difference between Natural and Voluntary Motion; where things are naturally moved, there Nature hath not endued them with Organs or Inſtruments of Motion, nor does any wearineſs ſucceed by ſuch Motion, ſo long as no violence or accident does hinder, or quicken it. Thus the Heavenly Bodies in the Concave of the Univerſe are moved by an eternal Motion, yet have no Organs or Inſtruments of Motion; nor are they ever weary or tyred; or ſubject to any hindrance, or can be quickned in their Motion; ſo is the vaſt Body of the Ocean perpetually moved into Ebbing and Flowing, without any Organs or Inſtruments of Motion, yet is not this conſtant, but in Spring-Tides the Water ſwells higher in Flowing, and falls lower in their Ebbing, and by the blowing of the Winds, and many Internal cauſes they Ebb and Flow, more or leſs. Yet I have ſometimes obſerved, (& am told it is always ſo) that after the greater rage of Tides, the Sea becomes more calm; and I have after a great rage of the Sea, ſtood in admiration, looking upon it when the Water was as ſmoth as in a Lake, and the waves ſcarce made any murmur or beating upon the ſhoar.

So the Motion of all the Bloods in ſenſitive Creatures is Natural, nor are they endued with any Inſtruments of Motion, yet ſubject to infinite accidents, which does quicken them in their Motion; yet ſo much more as they are quickned, or moved faſter, ſo much more they fall lower and move leſs, when they ceaſe their extraordinary Motion, ſo that after the hot fit in Agues or Feavers is paſt, the Blood falls ſo much lower, or moves ſo much leſs in the cold fit.

But it is other ways in Voluntary Motion, at the will of the Creature, where though the Power and Organs or Inſtruments of Motion be Natural, yet the exerciſe of this power is voluntary, by the inſtruments which Nature had before ordained; and herein Creatures become wearied and tyred, ſo as ſleep is neceſſary to repoſe Creatures from Action, to enable them to exerciſe and voluntary Action after waking; and therefore Bodies who move naturally, conſtantly perform it without Sleeping.

Corollary.

By the ſame Reaſon, I ſay, Man cannot make Man or any other ſenſitive Creature, a fruitful Creature, *viz.* endue him with a power of begetting his own kinds in other Bodies.

For

For Man and other ſenſitive Creatures, are Naturally fruitful Creatures. 49 *Pet.*

And Man is a Creature. 1 *Pet.*

Conſequence.

From hence it follows, that if Man or Woman or any ſenſitive Creature be Naturally Barren, no Humane Art or induſtry can make them fruitful; or if they be deprived of the parts or means, by which Nature deſigns Propagation or Generation, they by no power in Man or any Creature, can be made fruitful.

Suppoſe therefore, that Phyſicians and Mountebanks had the ſame liberty of Gelding Men and Women, as Sow-gelders have of Swine and other Cattle; and wiſely Diſſect the Parts, and learnedly read Anatomy-Lectures upon them; yet this ſhall never intitle them to beget their Wives and Wenches with Child, beyond the power they are Naturally endued with.

Corollary 2.

By the ſame Reaſon, I ſay, Man cannot make Trees or Plants fruitful.

For Trees and Plants are Naturally fruitful. 54 *Pet.*

And Man is a Creature. 1 *Pet.*

Note,

Suppoſe a Man ſhould make the buſineſs of his Life to be Anatomizing Acorns, and the Seeds of other Trees and Plants, to inquire into the Plaſtick or Forming Power, contained in the firſt-breed, or more watry part of the Seed; and tell ſtrange Tales of the difference he obſerves in them; and be always mangling of Trees and Plants, to obſerve their different alterations in their ſucceeding growth? Would not any other Man believe him to be vain and idle? Yet what more Learning or Reaſoning is in breaking Hens-Eggs, and deſtroying the Parent and Off-ſpring, to enquire into the Generation of their parts? And whether is not this to as little purpoſe, as deſtroying Trees and Plants, and their Seeds, to inquire how Nature brings them to paſs?

Propoſition 15.

If the Body of Man and all other ſenſitive Creatures ſhall not be renewed by the Juices of Food, They will be Starved.

Contempl. Is of the Body of Man and other ſenſitive Creatures.

Sup. That they ſhall not be renewed by the Juices of Food.

Queſt. Whether they will be ſtarved? I ſay, they will.

Demonſtration.

For if the continual expence of things, ſhall not be renewed by other matter, theſe things will be conſumed or ſtarved. 6 *Ax.*

But the Outward Blood in its Circulation does continually ſpend or ſend out of the Bodies of Man and other ſenſitive Creatures, the more ſubtile parts of their Bodies. 38 *Pet.*

And the Soul of ſenſitive Creatures, does naturally renew or repair their Bodies by the Juices of Food received into their Stomacks. 19 *Pet.*

Yet Man or other ſenſitive Creatures do not receive Food into their Stomacks, or ſhall not eat or drink. *Sup.*

Therefore their Bodies will be conſumed or Starved; which was to be Demonſtrated.

Note,

By Bodies being ſtarved or conſumed, for want of Food, I do not underſtand ſuch a Conſumption, as to reſolve Bodies into Particles, ſo as none of the parts remain; but a Conſumption or ſtarving ſo as the Body ſhall not longer receive Life, nor the parts perform the offices which were deſigned by living.

But though by this Propoſition, if the Bodies of Men and all ſenſitive Creatures be not nouriſhed or renewed by Food, they will be ſtarved. Yet by the 24 *Petition*, neither Man or any other living Creature, ever provided Food for themſelves. And by the 2 *Propoſition*, Man did not make himſelf a living Creature. And by the 3 *Propoſition*, was not made a a living Creature by Man or any other Creature. And by the 5 *Propoſition*, no Man or other Creature did form his Body. And by the 10 *Propoſition*, no Man or other Creature endued the Bloods with a power of nouriſhing or repairing their Bodies; Or if any did, yet by the 24 *Petition*, neither Man or any other living Creature, ever provided Food for it ſelf.

Concluſion.

Who then is this Agent who firſt formed Man, and breathed into him an Underſtanding and Reaſonable Soul, capable of eternal Happineſs? Where is this Provident Goodneſs to be found, which provided Food for Man and all other living Creatures, not onely upon the face of the Earth, but in the deep of the Waters, before they were made? In what Store-houſe was Food eternally treaſured up to feed the innumerable Creatures in the preſent Age and future Generations? Who endued theſe different Creatures with Organical Bodies, in infinite differing manner, to ſeek the Food which was before provided for them? Who is he who endued the Bloods of ſenſitive Creatures in their various Circulations, with a power continually to renew and repair their Bodies by Food? And who is he who watches not in vain, nor ever ſleeps, but by an eternal power in all the commotions and alterations which happen by Time, governs and protects all Creatures, till they arrive at their laſt deſigned End? This is that power which made Man and all Senſitive and Inſenſitive Creatures capable of Propagating their Kinds in other Bodies; when in themſelves they ſhall decay and die; and is every-where preſent and in the moſt inward Cloſet of the Womb, from one ſmall drop of Water, without any Organs or Inſtruments, formeth an Organical Body to perform the ends it deſigned by ſo wondrous a work? And what can Man return in requital!

Add,

Every Act will be ſo much more, by how much more ſhall be added to it. *For the* 13 Axiom.

ERRATA.

DESIGNE, *for* 38 Definitions, *read* 36 Definitions. 1 *Note an* Axioms, *line* 6. *for* 10 Petition, *read* 10 Definition, *page* 6. *margin, for* 54 Petition, *read* 55 Petition.

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